DOCUMENT RESUME

ED 258 027 CE 041 717

AUTHOR	Powell, Theressa
TITLE	Duplication. Units of Instruction. Office Duplication Practices. Teacher's Guide.
INSTITUTION	East Texas State Univ., Commerce. Occupational Curriculum Lab.
SPONS AGENCY	Texas Education Agency, Austin. Dept. of Occupational Education and Technology.
PUB DATE	84
NOTE	272p.; For a related document, see CE 041 716.
AVAILABLE FROM	Occupational Curriculum Laboratory, East Texas State University, Commerce, TX 75428 (Order No. BO-178-TG).
PUB TYPE	Guides - Classroom Use - Guides (For Teachers) (052)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Behavioral Objectives; Classroom Techniques; *Competency Based Education; Equipment Maintenance; Equipment Utilization; Guidelines; Learning Activities; Lesson Plans; *Office Machines; *Office Occupations Education; Office Practice; Postsecondary Education; *Printing; *Reprography; Secondary Education; State Curriculum Guides; Teaching Methods; Units of Study

ABSTRACT

This teacher's guide is designed for use in helping secondary and postsecondary students in office occupations education programs to become familiar with duplication procedures and machines. Addressed in the individual units of the guide are the following topics: measurement, paper characteristics and classifications, copy preparation for pasteup masters, fluid duplication, stencil duplication, platemaking, offset duplication, and supplementary machines. Each unit contains some or all of the following: objectives, notes to the instructor, information sheets, transparency masters; activity sheets, a test, and answers to activity sheets and tests. (MN)

****

* Reproductions supplied by EDRS are the best that can be made *

* from the original document. *

****

TX8413303

ED258027

OFFICE DUPLICATION PRACTICES

UNITS OF INSTRUCTION

DUPLICATION

TEACHER'S GUIDE

Prepared by
Theressa Powell

Published by
Occupational Curriculum Laboratory
Center for Vocational Education
Department of Secondary and Higher Education
East Texas State University
Commerce, Texas

in cooperation with
Texas Education Agency
Occupational Education and Technology
Austin, Texas

CE041717

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

FIRST EDITION
1984

first printing 1984--500 copies

Brand names, company names, trademarks, or other identifying symbols appearing in the text are used to clarify and identify and do not constitute a recommendation or endorsement.

To insure educational equity, this material has been reviewed to eliminate bias or stereotyping.

Occupational Curriculum Laboratory
East Texas State University
Commerce, TX 75428

(214) 886-5623

ETSU, an Equal Opportunity University, complies
with all federal requirements prohibiting
discriminatory activities

TABLE OF CONTENTS

	Page
Acknowledgments	v
Preface	vii
Introduction	ix
Use of the Instructional Units	xi
Unit I--Measurement	1
Unit II--Paper Characteristics and Classifications	53
Unit III--Copy Preparation for Pasteup Masters	77
Unit IV--Fluid Duplication	129
Unit V--Stencil Duplication	173
Unit VI--Platemaking	221
Unit VII--Offset Duplication	261
Unit VIII--Supplementary Machines	309

ACKNOWLEDGMENTS

Appreciation is extended to the many individuals who contributed their time and experience to the development of this book, Duplication. Credit is extended to Bob Gordon, Office Education Director and the staff of the Division of Occupational Education and Technology for their direction and leadership in initiating and supporting this effort.

The contents of this publication were designed by the statewide Office Duplication Practices Advisory Committee. Members of this committee generously provided input and received materials as they were developed by Occupational Curriculum Laboratory staff. Special thanks must go to the following instructors and business professionals:

Teacher Advisory Committee

Kay Franklin, Kennedale High School, Kennedale
Mary Ann Gallager, Everman High School, Everman
Joyce Gulley, Sam Houston High School, San Antonio
Lessie Graham, Career Education Center, San Antonio
Sandy Lane, Roosevelt High School, San Antonio
Carolyn Lecocke, John Marshall High School, San Antonio
Gwendolyn Keefer, Canutillo High School, Canutillo
Tresa Meece, Vocational Center, Odessa
Darrell Wolcott, New Caney High School, Porter

Business Advisory Committee

John Leugemors, Commerce
Caroline Moore, McAllen
Ann Grasso, San Antonio
J. A. Buckley, San Antonio
Henry Stultz, San Antonio

Thanks is extended to Kay Franklin and Mary Ann Gallager for allowing OCL staff to photograph the various machines throughout this book.

A special thanks to Dr. Bill Barnes, OCL Director, for his direction, guidance, and assistance in the completion of this publication. Gratitude is expressed to Kathie Wells for editing and to the secretarial staff for word processing this publication. A special appreciation to Bob Norsworthy and the Graphic Arts staff for the illustrations and drawings used in this publication and to John Leugemors and the Print Shop for printing this publication.

PREFACE

The Duplication Guide was prepared to provide quality instructional materials for Office Duplication Practices programs in Texas. The Occupational Curriculum Laboratory is currently developing and disseminating competency-based materials under contract with the Texas Education Agency for both secondary and postsecondary programs. All publications and instructional materials are developed by curriculum specialists who are experienced instructors and are validated for technical content by business and industry and field-tested by teachers and students across the state.

This guide, along with the Introduction to ODP Guide, the Consumer Mathematics for ODP Guide, and the Clerical for ODP Guide, all produced by the Occupational Curriculum Laboratory, serve as an excellent basis for achieving the Office Duplication Practices program goals as mandated by the Texas Education Agency. The purpose of developing these instructional materials is to make them easily usable by both the teachers and the students; therefore, suggestions and comments about this instructional guide are requested.

INTRODUCTION

This guide is one of the four publications developed for Office Duplication Practices. In addition, Office Duplication Practices competency profile has been developed to assist in recording individual student progress and in student placement and follow-up.

Using objectives rated as necessary for the success of the program by practicing teachers across the state, the essential elements common to all vocational programs, and the essential elements for Office Duplication Practices, the guides are formatted in units of instruction to assist in the mastery of the objectives. Because the guides were written in this manner, uniformity in classroom instruction and program accountability across the state may be verified.

This publication contains eight units of instruction designed to help teachers provide students with identified skills in duplication. The units address the following topics:

Measurement
Paper Characteristics and Classifications
Copy Preparation for Pasteup Masters
Fluid Duplication
Stencil Duplication
Platemaking
Offset Duplication
Supplementary Machines

A teacher's guide and student manuals are available; the teacher's guide contains information and suggestions for using each of the units. Additional information and activities may be added if necessary to meet the individual needs of each student.

USE OF THE INSTRUCTIONAL UNITS

INSTRUCTIONAL UNITS

Each instructional unit includes the following basic components: objectives, notes to the instructor, information sheets, transparency masters, activity sheets, tests, and answers to the activities and tests. Each unit is planned to cover more than one lesson or period of instruction.

Previewing the unit before the lesson will help the instructor to determine:

A. The amount of material to be covered in each class period

B. Supplemental materials that must be ordered or secured

C. Resource people who must be contacted

D. The teaching sequence for the information and the activities

E. The subject areas that he/she wishes to cover

OBJECTIVES

Each unit of instruction is based on performance objectives. These objectives state the goals of the program, thus providing a sense of direction and accomplishment for the student.

Performance objectives are stated in two forms: unit objectives, which state the terminal performance expected of the student upon completion of the unit, and specific objectives, which are those performances that will help the student to master the unit objective.

Since the objectives of the unit provide direction for the learning process, it is important for the teacher and students to discuss the objectives prior to covering the information in the unit. This discussion will provide a common understanding between teacher and student of the intent of the objectives. Performance terms have been used in all objectives of the units to assist in promoting the effectiveness among all individuals using the materials.

Teachers should feel free to delete or add objectives to tailor the material to the needs of the students and the program. When objectives are added, corresponding information sheets, activities, and tests should be designed and constructed.

NOTES TO THE INSTRUCTOR

Each unit provides a "Notes to the Instructor" section outlining steps to follow in accomplishing specific objectives. The instructor should carefully preview this section prior to any lesson, making additional notes that would assist in conveying the information to the students.

In addition, the instructor should select, sequence, or modify any information and activity sheets deemed necessary for the local teaching situation. Arrangements should be made and supplies should be assembled as required for any activity sheets selected.

Instructors are strongly encouraged to use any additional instructional activities, methods, and references that would aid in accomplishing the objectives.

ANSWERS TO ACTIVITY SHEETS AND TESTS

Answers for activities and tests are provided directly after the "Notes to the Instructor" and may be used by the teacher for checking student achievement of the objectives. Many of the activities are geared more to student participation and must be evaluated to the satisfaction of the instructor.

INFORMATION SHEETS

Information sheets provide content essential for meeting the cognitive (knowledge) objectives of the unit. Information may be presented in two ways: 1) The instructor may use the information sheet as a guide for presenting the background knowledge necessary for the students to complete the specific objectives and ultimately the unit objective, or 2) Students may be allowed to read information sheets before, or as information is discussed in class. Students should take notes on any additional information presented.

TRANSPARENCY MASTERS

Transparency masters present information in a special way. The students may see as well as hear the material being presented, thus reinforcing the learning process. Transparencies may present new information, stimulate discussion, or reinforce information presented in the information sheets. They are also very effective when identification is necessary.

Transparencies should be made from the masters and placed in the teacher's notebook where they will be readily available for use. Transparencies will direct attention of the class to the topic of discussion as well as generate other thoughts for discussion.

ACTIVITY SHEETS

Activity sheets provide direction to study and also provide application and reinforcement of cognitive materials presented. An effort has been made to incorporate the following elements of the learning process: translation, interpretation, application, analysis, synthesis, and evaluation so that the learning style of each student will be recognized.

The activity sheets may be given to the students for completion in class or may be used as homework assignments. Answer sheets are provided which may be used by the teacher and/or student in checking student progress.

The instructor should preview the activity and "Notes to the Instructor" sheets prior to making student assignments to assure that information has been covered and all supplies required are available. Class time should be set aside for those that require group participation. Those activities that require student participation rather than written answers should be evaluated to the satisfaction of the instructor.

TEST

Written tests are provided to measure students' understanding of the information covered in each information sheet. Individual test items may be used as a pre-test measure or as a review oral quiz to assist the instructor in spotting difficulties being encountered by students in their efforts to accomplish the unit objective. The individual tests over the information sheets may also be grouped as a semester or unit test. The instructor should construct additional test items for any objectives and information added to the unit.

UNIT I

MEASUREMENT

UNIT OBJECTIVE

After completing this unit, the student should be able to identify terms dealing with the English and printer's measuring system. The student should also have an understanding of the scales or line gauges and be able to convert between the systems. This knowledge will be evidenced by demonstrating the use of each system and satisfactorily completing a unit test.

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student should be able to:

1. Match terms and definitions for both the English system and the printer's system
2. Identify different scale graduations
3. Read a ruler in sixteenths, eighths, fourths, and halves
4. Identify parts of a type character
5. Use the point system scale
6. Draw line lengths in the English system and the printer's system
7. Measure lines and words in the English system and the printer's system
8. Measure body size of a type character

UNIT I

MEASUREMENT

NOTES TO THE INSTRUCTOR

I. Preparation for the Unit

  A. Preview the unit. To utilize this curriculum in the most effective way, you should review the unit of instruction and localize and individualize the material for your program.

  B. Acquire line gauges and rulers for your students.

  C. Prepare a bulletin board.

II. Objective Sheet

  A. Review all objectives and then add or delete to meet your own program needs.

  B. Review and discuss with the student each specific objective as it relates to the program.

III. Information and Activity Sheets

  A. INFORMATION SHEET 1--ENGLISH SYSTEM

    1. Explain the terminology.

    2. Explain the different scale graduations (Do ACTIVITY SHEET 1).

    3. Explain the importance of measuring items correctly (Do ACTIVITY SHEETS 2-7).

  B. INFORMATION SHEET 2--PRINTER'S SYSTEM

    1. Discuss the printer's system of measuring.

    (NOTE: If students are having problems with the English system of measuring, omit this section until students can grasp this concept.)

    2. Explain the terminology.

    3. Do ACTIVITY SHEETS 8-11.

IV. Transparency Masters

  A. TM-1--DIFFERENT SCALE GRADUATIONS

  B. TM-2--POINT SYSTEM SCALE

  C. TM-3--PARTS OF A TYPE CHARACTER

V. Evaluation

A. The unit test is divided into two parts.

(NOTE: Each part covers the corresponding Information Sheet.)

B. Various approaches may be used in testing.

(NOTE: Research indicates frequent testing on small units is more effective in developing retention for students.

1. Give each part of the test after completion of each Information Sheet and Activity Sheet.
2. Use the test as an assignment for the students.
3. Some students may respond better to an oral test with the instructor.
4. You should add evaluation questions for any material added to the unit.

VI. Answers to the Activity Sheets and Test

A. Answers are based upon information covered in the unit.

B. For convenience in grading, add answer sheets to correspond to questions added to the test.

VII. References

A. Graphic Arts: Orientation, Composition, Paste-up. Stillwater, OK: Mid-America Vocational Curriculum Consortium, Inc., 1981.

B. Leon, Dean Phillip. Graphics Master. 2nd ed., Los Angeles: Dean Leon Associates, 1973.

C. Prast, Z. A. Photo-Offset Lithography. South Holland, IL: Goodheart-Wilcox Company, Inc., 1977.

UNIT I

MEASUREMENT

ANSWERS TO ACTIVITY SHEETS

ACTIVITY SHEET 1

A. halves
B. sixteenths
C. inches
D. eighths
E. fourths

ACTIVITY SHEET 2

A. 1/8
B. 1/4
C. 3/8
D. 1/2
E. 5/8
F. 3/4
G. 7/8
H. 1 inch
I. 1 1/8
J. 1 1/4
K. 1 3/8
L. 1 1/2
M. 1 5/8
N. 1 3/4
O. 1 7/8

ACTIVITY SHEET 3

Evaluated to the satisfaction of the instructor

ACTIVITY SHEET 4

A. 1 inch
B. 1 3/4
C. 1 3/16
D. 2 1/2
E. 3
F. 1 3/8
G. 3 1/2
H. 2 5/8
I. 2
J. 2 7/16
K. 2 1/4
L. 1/2
M. 1 9/16
N. 3 5/16
O. 1 11/16

ACTIVITY SHEET 5

A. 13/16
B. 1 3/16
C. 15/16
D. 9/16
E. 13/16
F. 1 1/4
G. 3/4
H. 7/8
I. 9/16
J. 5/8
K. 1 3/16
L. 11/16
M. 1
N. 7/8
O. 11/16

ACTIVITY SHEET 6

Evaluated to the satisfaction of the instructor.

ACTIVITY SHEET 7

Answer key on following page

ACTIVITY SHEET 8

A. 24 picas
B. 12 picas
C. 6 picas
D. 9 picas
E. 15 picas
F. 4 picas
G. 8 picas
H. 23 picas
I. 19 picas
J. 17 picas
K. 13 picas
L. 26 picas
M. 2 picas
N. 10 picas
O. 22 picas

ACTIVITY SHEET 9

Evaluated to the satisfaction of the instructor.

ACTIVITY SHEET 10

1. inches 5
   picas 30

2. inches 3
   picas 18

3. inches 4 1/2
   picas 27

4. AB inches 4
   picas 24

   BC inches 2
   picas 12

ACTIVITY SHEET 7

7

ACTIVITY SHEET 11

A. 5 picas
B. 6 picas
C. [illegible] picas
D. 3 picas
E. 4 picas
F. 8 picas
G. 5 picas
H. 6 picas
I. 5 picas
J. 6 picas
K. 7 picas
L. 4 picas
M. 6 picas
N. 4 picas
O. 4 picas

UNIT I

MEASUREMENT

ANSWERS TO UNIT TEST

PART 1

A.
1. G
2. H
3. F
4. I
5. A
6. C
7. B
8. D
9. E
10. J

B.
1. inches
2. eighths
3. sixteenths
4. halves
5. fourths

C.
1. 1/8
2. 1/2
3. 3/4
4. 1 1/8
5. 1 3/8

D.
1. 2 inches
2. 1 1/8
3. 2 7/16
4. 5/8
5. 2 3/4

E.
1. 15/16
2. 3/4
3. 1
4. 5/8
5. 3/4

PART 2

A.
1. B
2. D
3. E
4. C
5. F
6. G
7. A
8. I
9. H
10. J

B.
1. 10 picas
2. 7 picas
3. 18 picas
4. 2 picas
5. 9 picas

C.
1. 8 picas
2. 4 picas
3. 6 picas
4. 5 picas
5. 6 picas

UNIT I

MEASUREMENT

INFORMATION SHEET 1--ENGLISH SYSTEM

I. Terms and Definitions

A. Dimension--measurement in length, width, height, or distance around

B. Eighth--a measure of length containing 1/8 inch

C. Foot--a measure of length containing 12 inches

D. Fraction--a part of a whole number (Example: 1/8, 1/4, 1/2)

E. Graduation--the mark on a measuring tool indicating a certain size or amount

F. Half--a measure of length, when referring to inches, consists of 1/2 inch

G. Inch--a measure of length equal to 1/12 foot

H. Measurement--the act of finding the size of an object

I. Quarter--a measure of length consisting of 1/4 inch

J. Sixteenth--a measure of length, consisting of 1/16 inch

K. Whole number--any natural number that is not broken into parts (Example: 1, 2, 3, 4)

L. Yard--a measure of length equal to 3 feet or 36 inches

II. Pointers for Measuring

A. Be sure to place the ruler at the beginning of the measurement on the ruler.

(NOTE: Most rulers have an edge on both sides of the ruler.)

B. Be sure to place the ruler at the beginning of the object being measured.

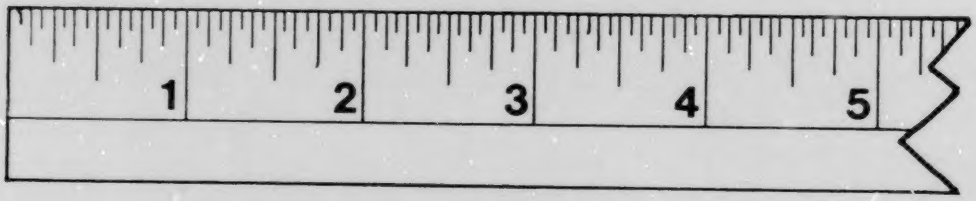
C. Know the scale graduation of the ruler.

(NOTE: The graduation lines are different lengths.)

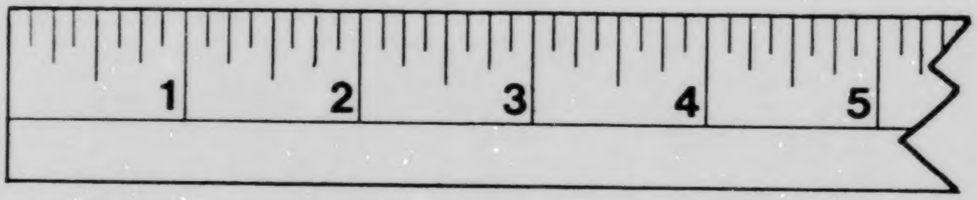
D. Know how close the measurement must be.

III. Rulers Have Different Scale Graduations

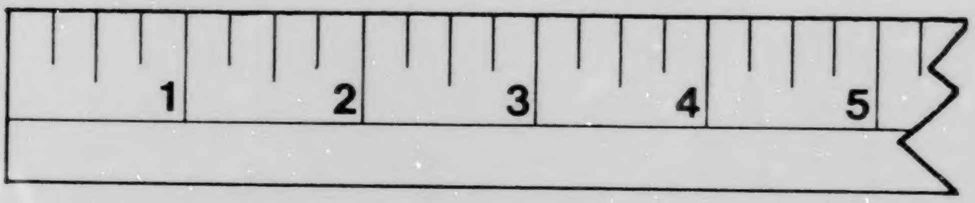
A. Sixteenths



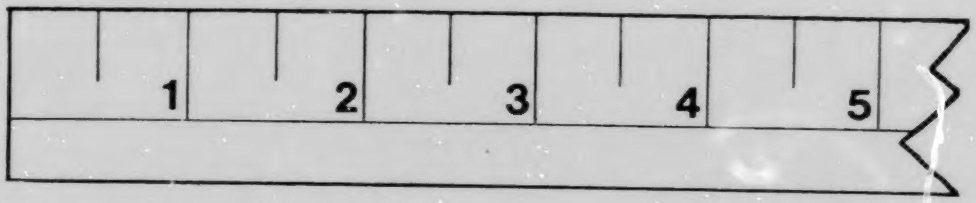
B. Eighths



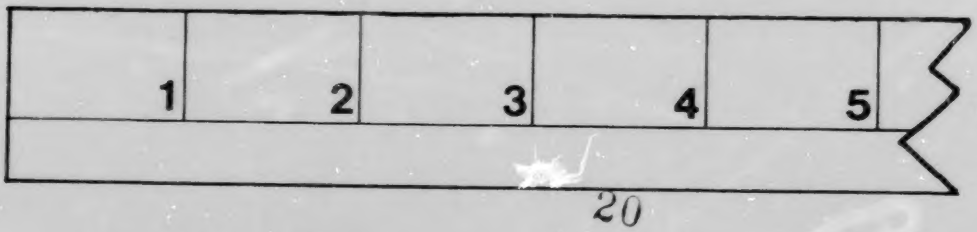
C. Fourths



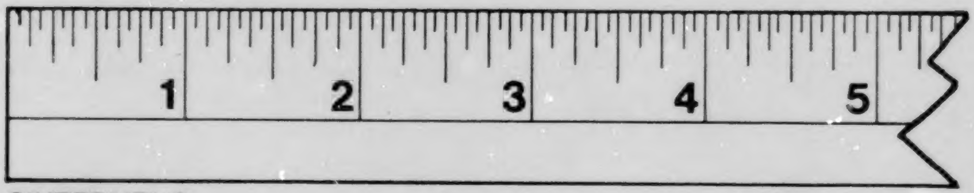
D. Halves



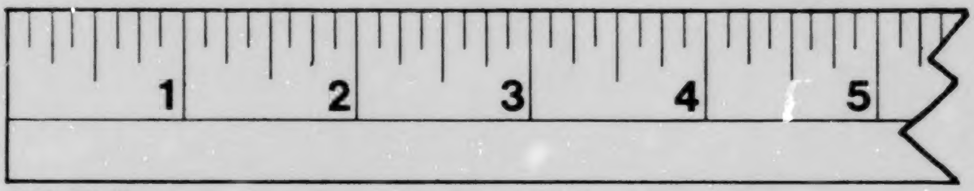
E. Inches



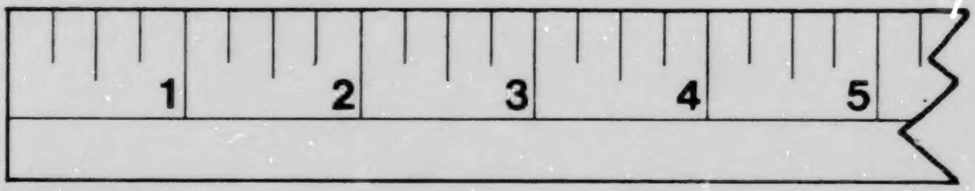
DIFFERENT SCALE GRADUATIONS



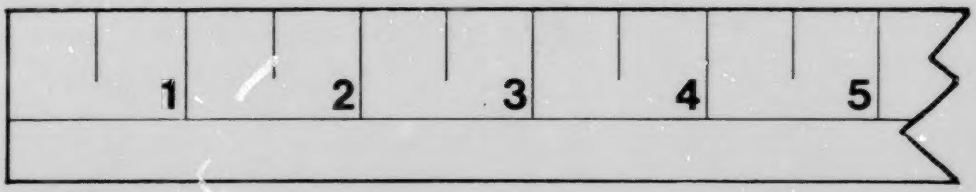
SIXTEENTHS



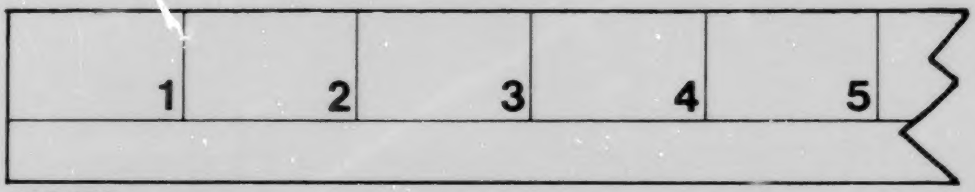
EIGHTHS



FOURTHS



HALVES



INCHES

MEASUREMENT

ACTIVITY SHEET 1--DECIDING SCALE GRADUATION

Directions: Tell the scale graduation of each scale.

A. ____________________

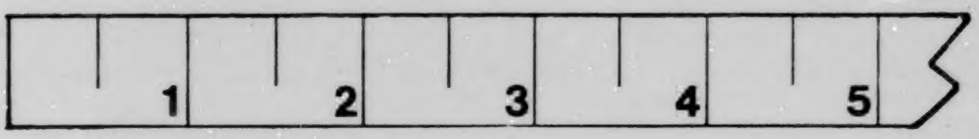
B. ____________________

C. ____________________

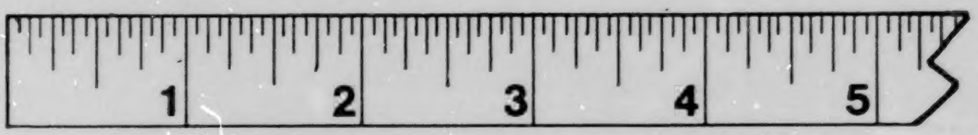
D. ____________________

E. ____________________

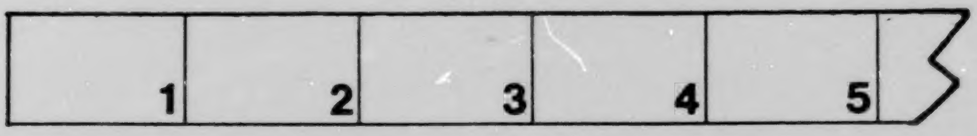
A



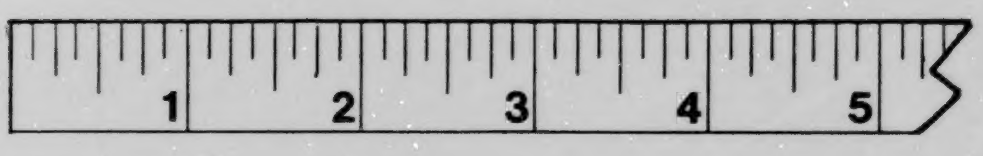
B



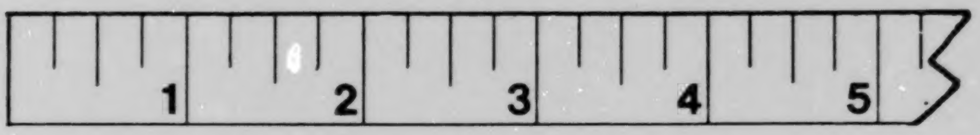
C



D



E



MEASUREMENT

ACTIVITY SHEET 2--READING A RULER

Directions: Label the measurement for each arrow.

A. ____________

B. ____________

C. ____________

D. ____________

E. ____________

F. ____________

G. ____________

H. ____________

I. ____________

J. ____________

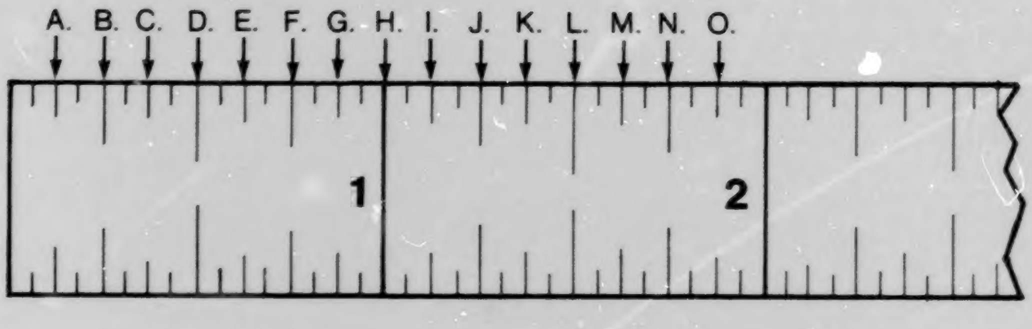
K. ____________

L. ____________

M. ____________

N. ____________

O. ____________



MEASUREMENT

ACTIVITY SHEET 3--DRAWING LINES

Directions: Using a ruler, draw the following line lengths.

1. 1/2 inch
2. 1/4 inch
3. 1 inch
4. 2 1/4 inches
5. 2 1/2 inches
6. 3 inches
7. 3 1/8 inches
8. 1 1/2 inches
9. 1 3/8 inches
10. 1/8 inch
11. 3/8 inch
12. 5/8 inch
13. 1 1/16 inches
14. 1 3/16 inches
15. 2 5/16 inches

UNIT I

MEASUREMENT

ACTIVITY SHEET 4--MEASURING LINES

Directions: Using a ruler, measure the following lines and tell the measurements.

A. ____________

B. ____________

C. ____________

D. ____________

E. ____________

F. ____________

G. ____________

H. ____________

I. ____________

J. ____________

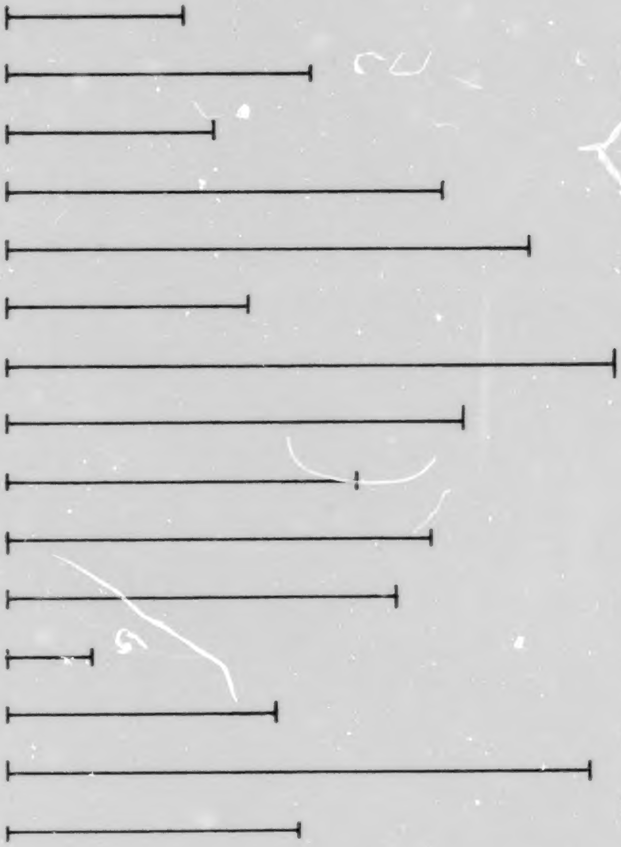
K. ____________

L. ____________

M. ____________

N. ____________

O. ____________



MEASUREMENT

ACTIVITY SHEET 5--MEASURING LETTERS AND WORDS

Directions: Using a ruler, measure the following letters and words and tell the measurement.

A. ________ SCALE

B. ________ **TERMINOLOGY**

C. ________ **DIMENSION**

D. ________ LINE

E. ________ **QUARTER**

F. ________ MEASUREMENT

G. ________ POINT

H. ________ SIXTEENTH

I. ________ PICA

J. ________ **EIGHTH**

K. ________ COMPOSITION

L. ________ BODY

M. ________ CHARACTER

N. ________ **ASCENDER**

O. ________ SERIF

UNIT I

MEASUREMENT

ACTIVITY SHEET 6--MEASURING NAMES

Directions: Type on a sheet of paper your name and the names of all your classmates. Measure your names and your classmates' names and tell the measurement.

MEASUREMENT

ACTIVITY SHEET 7--DRAWING BOXES

Directions: On the following page is a box 7" wide and 10" long. Using a ruler, measure and draw boxes within the box as specified:

1. In the upper left-hand corner, draw a box 3" wide and 3" long.
2. In the upper right-hand corner, draw a box 4" wide and 3" long.
3. Under the above boxes, draw a box 7" wide and 2½" long.
4. Under the above box on the left-hand side, draw a box 4½" wide and 1" long.
5. On the right side, draw a box 2½" wide and 1" long.
6. Below the above boxes on the left side, draw a box 1¼" wide and 3½" long.
7. On the right side, draw a box 5 3/4" wide and 2¼" long.
8. Below the above box, draw a box 5 3/4" wide and 1¼" long.

UNIT I

MEASUREMENT

INFORMATION SHEET 2--PRINTER'S MEASUREMENTS

I. Terms and Definitions

  A. Ascender--the part of a letter above the waist line

  B. Base line--the line of writing on which the main part of the letters rest

  C. Body size--measurement from bottom of "descender" to top of "ascender"

  D. Descender--the part of a letter below the base line

  E. Em--the square of a given type size

  F. En--one-half the width of an em

  G. Line gauge--ruler used by a printer that shows both inches and picas

  H. Pica--a unit of measure for sizing printer's type; there are 6 picas to one inch

  I. Point--a unit of measure for sizing printer's type; there are 72 points to one inch or 12 points to one pica

  J. Serif--a light line or stroke coming from the main stroke in a letter

  K. Waist line--the line of writing which the main part of the letter does not go past

II. Units of Measurement

  (NOTE: See TM-2)

  A. Point

    1. Smallest unit of measurement

    2. Used to measure type body size and leading

    3. Approximately 1/72 of an inch

B. Pica

1. Equal to exactly 12 points

2. Used to measure line length

3. Six picas equal to approximately one inch

C. Word spaces

1. Em--the square of the typebody of any size

(EXAMPLE: An em in 12 point type measures 12 x 12 points; in 10 point type it measures 10 x 10 points)

2. En--one-half the width of the em

3. Quad--blank type used to space out at the ends of lines in type composition and to indent

4. 3-Em space--1/3 of an em, normal spacing between words

5. Thin space--usually the 4- and 5-em space

III. The Relationship Between Points, Picas, and Inches

The Relationship Between

Points	Picas	Inches
9	3/4	1/8
18	1 1/2	1/4
27	2 1/4	3/8
36	3	1/2
45	3 3/4	5/8
54	4 1/2	3/4
63	5 1/4	7/8
72	6	1

IV. Measuring Type

(NOTE: See TM-3)

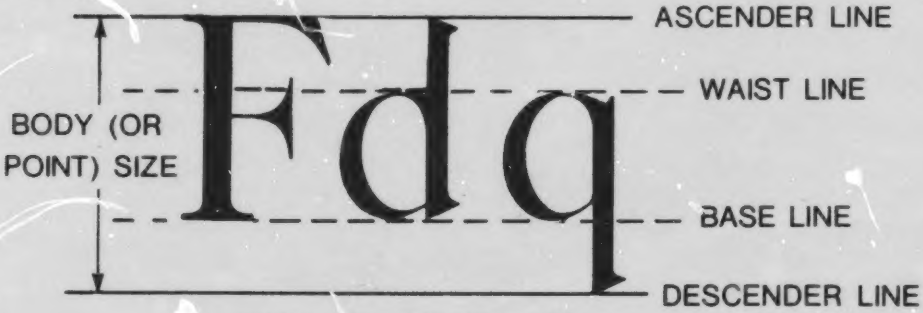
A. Body size

1. Refers to height of the particular type

2. Measured in points, with line gauge

3. Measured from bottom of "descender" to top of "ascender"

4. Type 12 points or smaller is known as "body" or "text" type while type 14 points or larger is known as "display" type



BODY SIZE MEASURING

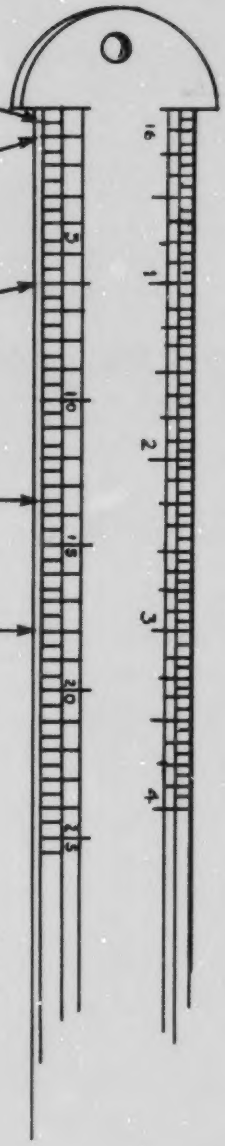
B. Line length

1. Also known as "measure"

2. Line length measured in picas, with line gauge

3. Line length should be appropriate to type size

POINT SYSTEM SCALE



6 POINTS

12 POINTS
1 PICA

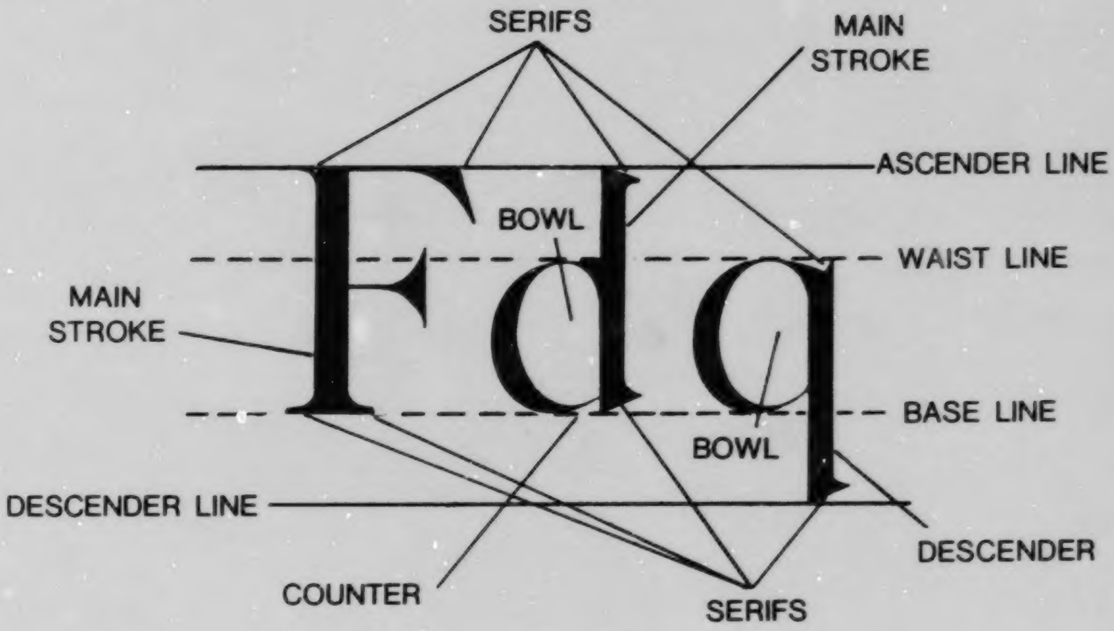
6 PICAS

THIS IS 13½ PICAS

THIS IS 18 PICAS

72 POINTS = 1 INCH

PARTS OF A TYPE CHARACTER



UNIT I

MEASUREMENT

ACTIVITY SHEET 8--MEASURING LINES

Directions: Using the line gauge, measure the following lines.

A. __________

B. __________

C. __________

D. __________

E. __________

F. __________

G. __________

H. __________

I. __________

J. __________

K. __________

L. __________

M. __________

N. __________

O. __________

MEASUREMENT

ACTIVITY SHEET 9--USING THE POINT SYSTEM SCALE

Directions: Using the line gauge, draw lines accurately to the following lengths.

1. 30 picas
2. 17 picas
3. 13 picas
4. 12 points
5. 25 picas
6. 24 points
7. 1 pica
8. 7 picas
9. 36 points
10. 10 picas

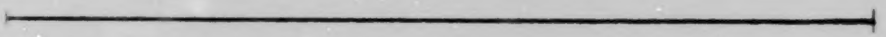
UNIT I

MEASUREMENT

ACTIVITY SHEET 10--USING THE INCH AND POINT SYSTEMS

Directions: Measure the lines below and give the measurement in inches and points.

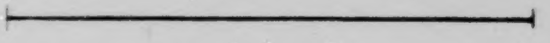
1.



inches ____________

picas ____________

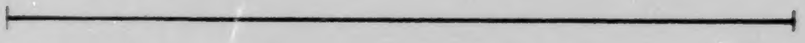
2.



inches ____________

picas ____________

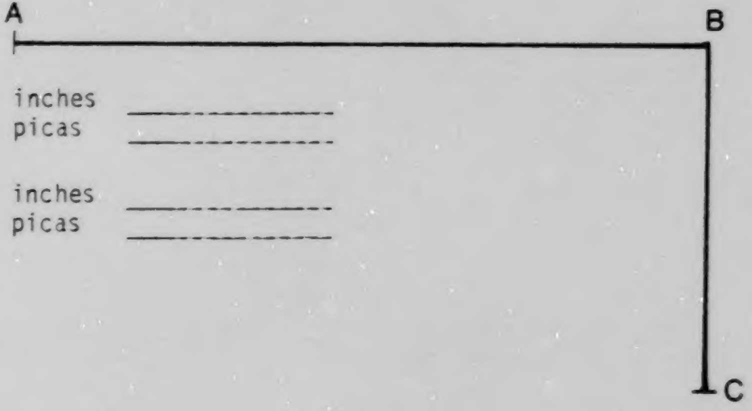
3.



inches ____________

picas ____________

4.



AB inches ____________

picas ____________

BC inches ____________

picas ____________

MEASUREMENT

ACTIVITY SHEET 11--MEASURING LETTERS OR WORDS

Directions: Using the line gauge, measure the line lengths of the following letters or words.

A. __________ SCALE

B. __________ DESCENDER

C. __________ **QUARTER**

D. __________ LINE

E. __________ **GAUGE**

F. __________ MEASUREMENT

G. __________ POINT

H. __________ SIXTEENTH

I. __________ SERIF

J. __________ **ASCENDER**

K. __________ COMPOSITION

L. __________ BODY

M. __________ CHARACTER

N. __________ PICA

O. __________ **EIGHTH**

UNIT I

MEASUREMENT

UNIT TEST--PART I

A. Match the following terms related to the English system to their correct definitions by placing the correct letter in the space at the left.

_____ 1. Measurement

_____ 2. Inch

_____ 3. Foot

_____ 4. Yard

_____ 5. Quarter

_____ 6. Eighth

_____ 7. Sixteenth

_____ 8. Half

_____ 9. Whole number

_____10. Graduation

a. 1/4 inch

b. 1/16 inch

c. 1/8 inch

d. 1/2 inch

e. 3

f. 12 inches

g. finding the size of an object

h. 1/12 foot

i. 3 feet or 36 inches

j. the mark on a measuring tool indicating a certain size or amount

k. measurement in length, width, height, or distance around

B. Indicate the scale graduation of each scale.

1. __________

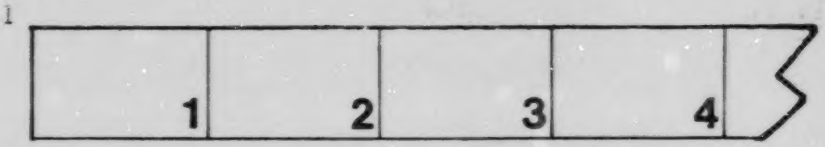
2. __________

3. __________

4. __________

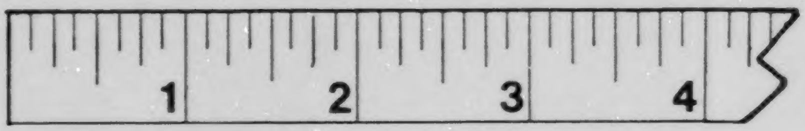
5. __________

1

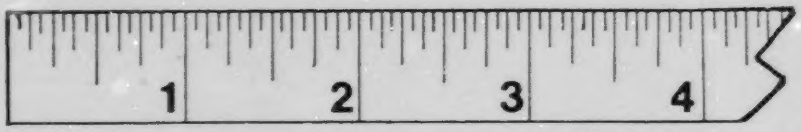


BEST COPY AVAILABLE

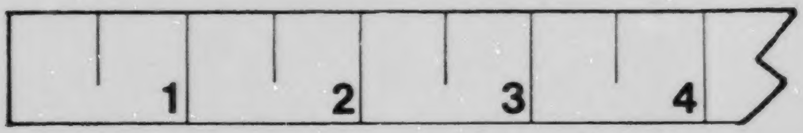
2



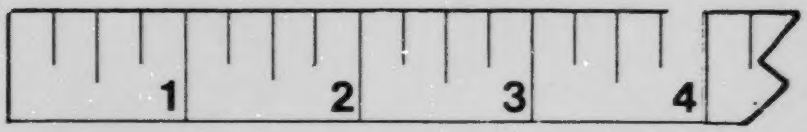
3



4

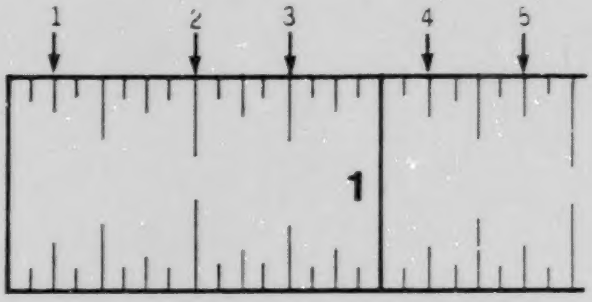


5



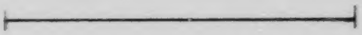
C. Indicate the measurement on the following scale.

1. __________
2. __________
3. __________
4. __________
5. __________

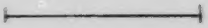


D. Measure the lines below and tell the measurement.

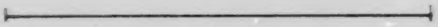
1. __________



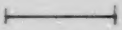
2. __________



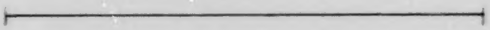
3. __________



4. __________



5. __________



E. Measure the following letters and tell the measurements.

1. __________ **DIMENSION**
2. __________ SERIF
3. __________ **CHARACTER**
4. __________ **EIGHTH**
5. __________ POINT

UNIT I

MEASUREMENT

UNIT TEST--PART 2

A. Match the following terms related to printer's measurement to their definitions by placing the correct letter in the space at the left.

_____ 1. Base line

_____ 2. Ascender

_____ 3. Body size

_____ 4. Descender

_____ 5. Em

_____ 6. En

_____ 7. Line gauge

_____ 8. Pica

_____ 9. Point

_____ 10. Serif

a. a scale used by a printer, showing both inches and picas

b. the line of writing on which the main part of the letters rest

c. the part of a letter below the base line

d. the part of a letter above the waist line

e. measurement from bottom of descender to top of ascender

f. the square of a given type size

g. one-half the width of the square of a given type size

h. a unit of measure for sizing printer's type; there are 72 to one inch or 12 to one pica

i. a unit of measure for sizing printer's type; there are 6 to one inch

j. a light line or stroke coming from the main stroke in a letter

B. Using a line gauge, measure the following lines.

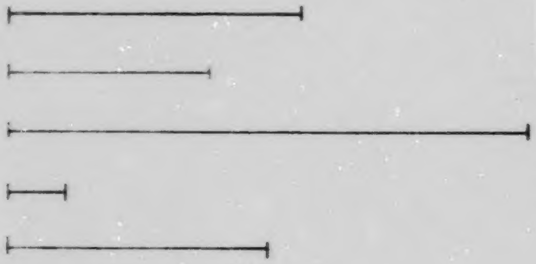
1. __________

2. __________

3. __________

4. __________

5. __________



BEST COPY AVAILABLE

C. Using the line gauge, measure the line length of the following letters. or words

1. ________ MEASUREMENT
2. ________ PICA
3. ________ **ASCENDER**
4. ________ POINT
5. ________ SIXTEENTH

UNIT II

PAPER CHARACTERISTICS AND CLASSIFICATIONS

UNIT OBJECTIVE

After completing this unit, the student should be able to identify and explain terms dealing with paper characteristics and classifications.

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student should be able to:

1. Define terms relating to the characteristics of paper
2. Complete the fold test, tear test, and bend test
3. Label the effects of moisture on paper
4. Match the types of paper used for duplicating different items
5. Tell the front side of a piece of paper
6. Identify paper measurements and paper sizes

UNIT II

PAPER CHARACTERISTICS AND CLASSIFICATIONS

NOTES TO THE INSTRUCTOR

I. Preparation for the Unit

A. Preview the unit. To utilize this curriculum in the most effective way, you should review the unit of instruction and localize and individualize the material for your program.

B Acquire the different types of paper as mentioned in the Information Sheet to show your students.

C. Prepare a bulletin board.

II. Objective Sheet

A. Review all objectives and then add or delete to meet your own program needs.

B. Review and discuss with the students each specific objective as it relates to the program.

III. Information and Activity Sheets

A. Explain how to select paper.

B. Explain the importance of knowing the grain direction (Do ACTIVITY SHEET 1).

C. Explain the importance of using the front side.

D. Explain the paper measurements, base size, base weight, and paper sizes.

E. Discuss the different paper classifications (Do ACTIVITY SHEET 2).

F. Explain the effects of moisture (Do ACTIVITY SHEET 3).

IV. Transparency Masters

A. TM-1--TEAR TEST, FOLD TEST, AND BEND TEST

B. TM-2--PAPER MOISTURE AND RELATIVE HUMIDITY

V. Evaluation

A. Give the test after the completion of the Information Sheet and Activity Sheet.

B. Use the test as an assignment for the student.

C. Some students may respond better to an oral test.

D. You should add evaluation questions for any material added to the unit.

VI. Answers to the Activity Sheets and Test

A. Answers are based on the information covered in the unit.

B. For convenience in grading, add answer sheets to correspond to questions added to the test.

VII. References

A. Graphic Arts, Book III: Press and Related Processes. Stillwater, Okla.: Mid-America Vocational Curriculum Consortium, Inc., 1982.

B. Kupsh, Joyce. Duplicating; Machine Operation and Decision Making. Encino, Cal.: Glencoe Publishing Co., Inc., 1972.

C. Nanassy, Louis C., William Selden, and Jo Ann Lee. Reference Manual for Office Workers. Encino, Cal.: Glencoe Publishing Co., Inc., 1977.

UNIT II

PAPER CHARACTERISTICS AND CLASSIFICATIONS

ANSWERS TO ACTIVITY SHEETS

ACTIVITY SHEET 1

Evaluated to the satisfaction of the instructor.

ACTIVITY SHEET 2

1. e
2. h
3. a
4. b
5. e
6. i
7. b
8. a
9. c
10. d
11. j
12. g
13. b
14. f
15. b

ACTIVITY SHEET 3

1. Stretching
2. Shrinking
3. Curling
4. Wavy edges

UNIT II

PAPER CHARACTERISTICS AND CLASSIFICATIONS

ANSWERS TO UNIT TEST

A. 1. b
2. c
3. b
4. c
5. a
6. c
7. b
8. c
9. c
10. b
11. a
12. b
13. b
14. c
15. a

B. 1. Tearing
2. Folding
3. Bending

C. Two of the following:

1. The watermark is right side up.
2. Paper is packaged so that it is lying front side up as the label is read.
3. Usually a silver coin will make a mark on the front side.

UNIT II

PAPER CHARACTERISTICS AND CLASSIFICATIONS

INFORMATION SHEET

I. Terms and Definitions

  A. Base size--the size of paper before it is cut

  B. Base weight--the weight of 500 sheets of base paper (also known as substance)

  C. Coated paper--paper used to print pictures and photographs

  D. Fiber--wood pulp reduced to wood fibers, the basic ingredient of paper

  E. Grain--the direction the fibers run in the finished sheet of paper

  F. Horizontal--across

  G. Opacity--the amount of "show through" of the printed copy from the back side

  H. Paper finish--the paper's surface characteristics

  I. Sizing--the matter used to glaze or stiffen paper

  J. Vertical--up and down

  K. Uncoated--paper which is not coated

  L. Watermark--a design pressed into paper as it is being made

II. In Selecting Paper, One Should Consider:

  A. The purpose for the paper

  B. The paper grain

  C. The paper finish

  D. Cost

  E. Paper size

III. Paper Grain Is the Direction the Fibers Run

  A. Vertical or long grain--better for feeding into duplicating machines

  B. Horizontal or short grain--better for typing and filing

IV. Tests for Deciding the Grain Direction

(NOTE: See TM-1)

A. Tearing--tear sheet from the end and from the side; cleanest tear is with the grain direction

B. Folding--fold and crease paper sharply in both directions; the smoothest crease is with the grain

C. Bending--hold sheet first at one edge, then the other; the side producing the greatest sag is the direction of the grain

V. The Paper Finish Could Be:

A. Coarse, smooth, or textured

B. Glossy or dull

C. Hard or soft

VI. How to Tell the Front Side of a Piece of Paper

(NOTE: The front side gives the best typing and duplicating.)

A. The watermark is right side up.

B. Paper is packaged so that it is lying front side up as the label is read.

C. Usually a silver coin will make a mark on the front side.

VII. Paper Measurements

A. 1 quire - 24 or 25 sheets

B. 1 ream - 500 sheets

C. 2 reams - 1 bundle

D. 5 bundles - 1 bale

VIII. Base Size and Base Weight

A. Base size--determined by paper's common use size

(EXAMPLE: Bond paper has a base size of 17 x 22 since it is commonly cut into 8 1/2 x 11 (4 x 8 1/2 x 11 = 17 x 22)

B. Base weight--always the weight of one ream (500 sheets) of the base size

(EXAMPLE: If 500 sheets of 17 x 22 inches weighs 20 pounds, the base weight would be 20 pounds. Therefore, when the paper is cut, the four reams would be marked as base weight 20.)

IX. Paper Sheet Sizes

   A. Regular or standard paper is 8 1/2 x 11 inches.

   B. Legal size paper is 8 1/2 x 14 inches.

   C. Baronial size paper is 5 1/2 x 8 1/2 inches.

   D. Monarch size paper is 7 1/4 x 10 1/2 inches.

   E. Official size paper is 8 x 10 1/2 inches.

X. Types of Paper Classifications

   A. Bond paper

      1. Used for printing letterhead and office forms

      2. Quality bond paper has a watermark

      3. Base weight 12 to 24 pounds

   B. Bristol paper

      1. Used for index cards, business cards, and announcements

      2. Thicker than bond paper

   C. Duplicating bonds (fluid duplication)

      1. Has a slick, smooth surface to control the quality of dye

      2. Base weight from 16 to 110 (16 weight is the most common)

   D. Book paper

      1. Used in textbooks

      2. Comes coated or uncoated

      3. Common base weight is 18-pound

   E. Mimeo-bond paper

      1. Has a coarse texture for absorbing ink

      2. Common base weights are 16-, 20-, 24-, and 28-pound

   F. Cover paper

      1. Used for covers of books, brochures, menus, etc.

      2. Base weights are heavy (standard weight 65-pound)

      3. Comes coated or uncoated

G. Offset paper

    1. Has a sizing added to resist the moisture of offset printing

    2. Common base weight is 50-, 60-, or 70-pound

H. Thin papers

    1. Includes onionskin, manifold, and tissue

    2. Base weight is 9-pound

I. Print papers

    1. Includes newsprint for newspaper

    2. Has a soft, non-durable, highly absorbent finish

J. Tag board

    1. Has a high finish but a coarse texture to give a good writing surface

    2. Used for identification tags, kraft wrapping, etc.

XI. Paper Moisture Content--Has a Great Deal to Do with the Condition of the Paper

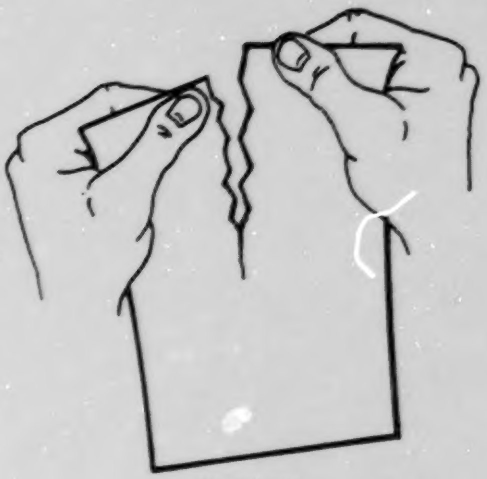
(NOTE: See TM-2)

A. Paper becomes wavy across the grain when dry paper absorbs moisture at the exposed edges.

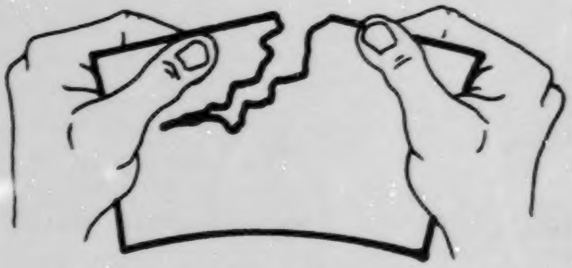
B. The edges of paper shrink when moist paper is in dry air.

C. Paper that is poorly made will often shrink or curl.

TEAR TEST

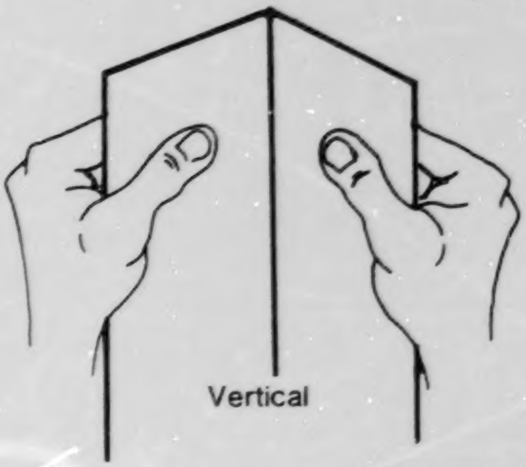


Vertical

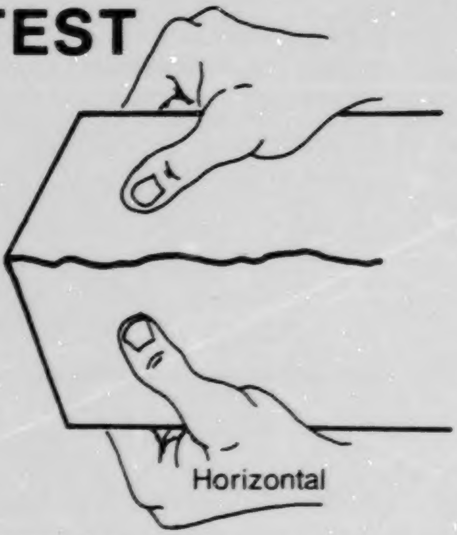


Horizontal

FOLD TEST

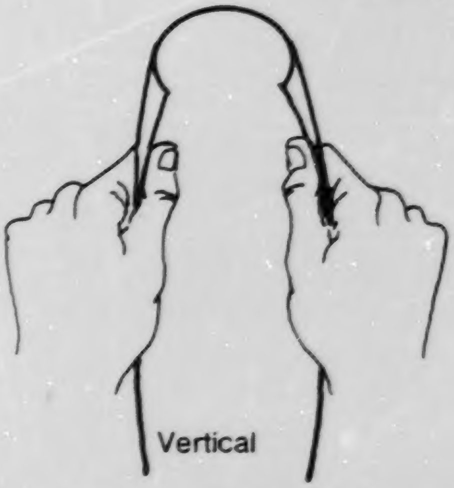


Vertical

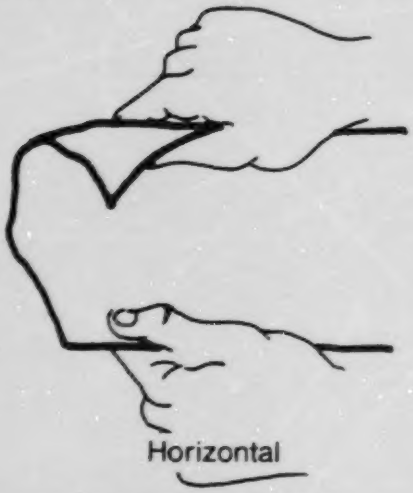


Horizontal

BEND TEST

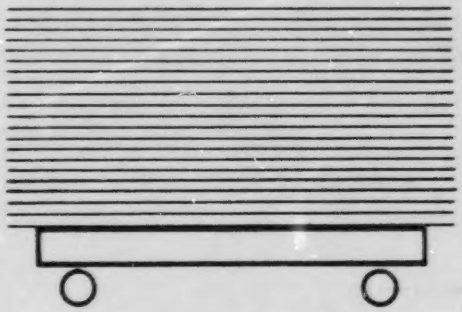


Vertical

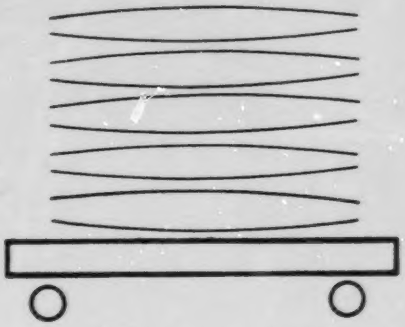


Horizontal

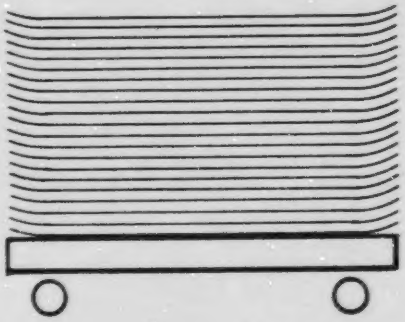
PAPER MOISTURE AND RELATIVE HUMIDITY



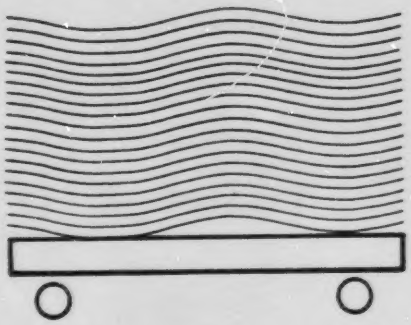
Stretching



Shrinking



Curling



Wavy edges

PAPER CHARACTERISTICS AND CLASSIFICATIONS

ACTIVITY SHEET 1--COMPLETING THE FOLD TEST, TEAR TEST, AND BEND TEST

Directions: Have each student do a "tear test," a "fold test," and a "bend test." Make notes of the differences the students observe. (Refer to Section IV of Information Sheet and TM-1.)

1. Tear test
    a. Tear a sheet of paper that is horizontal to your desk.
    b. Tear a sheet of paper that is vertical to your desk.
2. Fold test
    a. Fold a sheet of paper horizontally.
    b. Fold a sheet of paper vertically.
3. Bend test
    a. Hold a sheet of paper horizontally.
    b. Hold a sheet of paper vertically.

UNIT II

PAPER CHARACTERISTICS AND CLASSIFICATIONS

ACTIVITY SHEET 2--WHAT TYPE OF PAPER

Directions: Place the correct letter in the appropriate blanks.

a. Bond paper
b. Bristol paper
c. Duplicating bonds
d. Mimeo-bond paper
e. Cover paper
f. Offset paper
g. Thin papers
h. Print papers
i. Tag board
j. Book paper

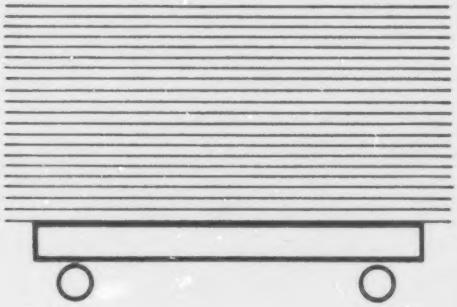
If you were duplicating the following, what kind of paper would you need?

_____ 1. Book cover
_____ 2. Newspaper
_____ 3. Letterhead
_____ 4. Index cards
_____ 5. Menu cover
_____ 6. Identification tags
_____ 7. Bridal announcement
_____ 8. Memo form
_____ 9. A fluid duplicating master
_____ 10. A stencil
_____ 11. Textbook
_____ 12. A carbon copy of a letter
_____ 13. Shower announcement
_____ 14. An offset master
_____ 15. Business cards

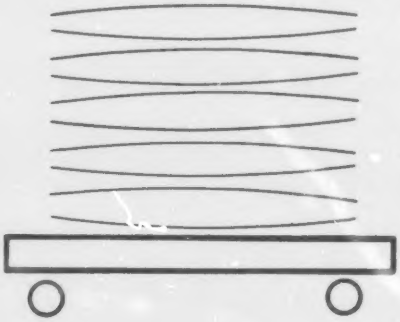
PAPER CHARACTERISTICS AND CLASSIFICATIONS

ACTIVITY SHEET 3--STRETCHING, CURLING, SHRINKING, AND WAVY EDGES

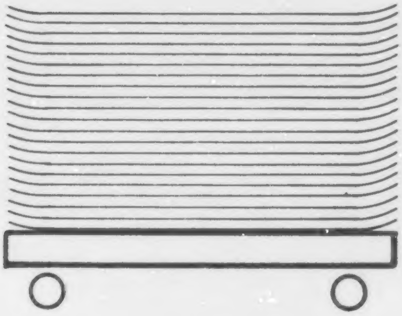
Directions: Label the type of effects that moisture has on paper, using the spaces provided below.



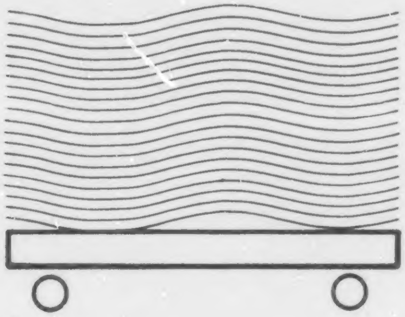
1. ____________________



2. ____________________



3. ____________________



4. ____________________

UNIT II

PAPER CHARACTERISTICS AND CLASSIFICATIONS

UNIT TEST

A. Complete the following statements by placing the correct letter in the blank provided at the left.

_____ 1. One quire of paper is:

a. 500 sheets
b. 25 sheets
c. 10 sheets

_____ 2. A ream of paper is:

a. 25 sheets
b. 300 sheets
c. 500 sheets

_____ 3. Long grain paper is better for:

a. typing
b. duplicating
c. filing

_____ 4. A regular size sheet of paper is:

a. 7 1/4 x 10 1/2
b. 8 1/2 x 14
c. 8 1/2 x 11

_____ 5. Legal size paper is:

a. 8 1/2 x 14
b. 8 1/2 x 11
c. 5 1/2 x 8 1/2

_____ 6. The basic ingredient in paper is:

a. grain
b. finish
c. fiber

_____ 7. The size of paper before it is cut is called:

a. substance size
b. base size
c. watermark

_____ 8. Paper used to print pictures or photographs is:

a. uncoated
b. sizing
c. coated

_____ 9. The weight of 500 sheets before it is cut is called:

a. base weight
b. substance
c. both a and b

_____ 10. The direction the fibers run in a sheet of paper is called:

a. base weight
b. grain
c. fiber

DO NOT FILM THIS PAGE

_____ 11. A design pressed into paper while it is being made is called:

a. watermark
b. finish
c. fiber

_____ 12. Index cards are made out of:

a. bond paper
b. bristol paper
c. cover paper

_____ 13. Paper used in stencil duplication is:

a. smooth paper
b. coarse paper
c. neither a nor b

_____ 14. Paper that has a watermark is:

a. print paper
b. tag board
c. bond paper

_____ 15. If moist paper is in dry air, the paper will:

a. shrink
b. stretch
c. curl

B. What are three methods of testing the direction of the grain?

1. ____
2. ____
3. ____

C. Name two ways to decide the front side of a piece of paper:

1. ____
2. ____

UNIT III

COPY PREPARATION FOR PASTEUP MASTERS

UNIT OBJECTIVE

After completing this unit, the student should be able to identify and explain terms dealing with copy preparation for pasteup masters. The student should be able to prepare a pasteup master. This knowledge will be evidenced through demonstration and by successfully completing a unit test.

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student should be able to:

1. Match the terms dealing with layout and pasteup masters with their definitions
2. Identify letter styles and sizes
3. Describe the purpose of a layout
4. Describe the considerations in copy preparation
5. List the stages of a layout
6. Describe the difference between line drawing and halftones
7. List the steps for attaching cutouts
8. Identify the types of cutouts
9. Identify the steps in preparing to do a pasteup master
10. Demonstrate the ability to:
    a. Draw lines
    b. Make thumbnail sketches
    c. Make rough layout drafts
    d. Make comprehensive layouts

UNIT III

COPY PREPARATION FOR PASTEUP MASTERS

NOTES TO THE INSTRUCTOR

I. Preparation for the Unit

A. Preview the unit. To utilize this curriculum in the most effective way, you should review each unit of instruction and localize and individualize the material for your program.

B. Design a bulletin board on layouts and pasteups.

C. Gather various prepared cutouts to show to the students.

D. After students have prepared the pasteup masters, allow students to prepare as many different duplicating masters as you have equipment.

II. Objective Sheet

A. Review all objectives and then add or delete to meet your own program needs.

B. Review and discuss with the students each specific objective as it relates to the program.

III. Information and Activity Sheets

A. INFORMATION SHEET 1--LAYOUT OF PASTEUP MASTER

1. Explain the terms and definitions to the students.

2. Explain and show, if possible, the different types of master makers.

3. Explain the different types of typewriter elements and letter styles.

4. Discuss with the students the three stages of a layout.

B. INFORMATION SHEET 2--PASTEUP MASTERS

1. Explain the terms and definitions to the students.

2. Show the students different types of cutouts.

3. Show the students several line drawings and halftones.

4. Explain the steps for preparing a pasteup master.

5. Explain the steps for attaching the cutouts.

6. Do ACTIVITY SHEETS 1-6.

(NOTE: These activities are designed for progression. They start out easy and gradually get harder.)

7. In ACTIVITY SHEET 6, students will have to find their own cutouts.

IV. Transparency Masters

(NOTE: Transparency masters are included in the students' manuals and can be used as Information Sheets.)

A. TM-1--LETTER STYLES

B. TM-2--DIFFERENT TONES

C. TM-3--TYPES OF BALANCE

D. TM-4--THUMBNAIL SKETCHES

E. TM-5--ROUGH DRAFT LAYOUT

F. TM-6--COMPREHENSIVE LAYOUT

G. TM-7--LINE DRAWINGS

H. TM-8--HALFTONES

V. Evaluation

A. The Unit Test is divided into two parts.

(NOTE: Each part covers the corresponding Information Sheet.)

B. Various approaches may be used in testing.

(NOTE: Research indicates frequent testing on small units is more effective in developing retention for students.)

1. Give each part of the test after completion of each Information Sheet and Activity Sheets.

2. Use the test as an assignment for the students.

3. Some students may respond better to an oral test with the instructor.

4. You should add evaluation questions for any material added to the unit.

5. You may want to test the students on how they can prepare a pasteup master.

VI. Answers to the Activity Sheets and Test

A. Answers are based upon information covered in the unit.

B. For convenience in grading, add answer sheets to correspond to questions added to the test.

VII. References

A. Carlsen, Darvey E. Graphic Arts. 4th ed., Illinois: Chas. A. Bennett Company, Inc., 1976.

B. Graphic Arts: Orientation, Composition, and Pasteup. Stillwater, Okla.: Mid-America Vocational Curriculum Consortium, Inc., 1981.

C. Lem, Dean. Graphic Master 2. California: Dean Lem Associates, 1977.

D. Pasewark, William R. Reprographics. 3rd Ed., Cincinnati: South-Western Publishing Co., 1984.

E. Prast, Z. A. Photo-Offset Lithography. Illinois: The Goodheart-Willcox Company, Inc., 1977.

UNIT III

COPY PREPARATION FOR PASTEUP MASTERS

ANSWERS TO ACTIVITY SHEETS

ACTIVITY SHEETS 1-6

Evaluated to the satisfaction of the instructor.

UNIT III

COPY PREPARATION FOR PASTEUP MASTERS

ANSWERS TO UNIT TEST

PART 1

A.
1. d
2. c
3. b
4. e
5. f
6. a
7. g
8. h

B.
1. Script 12
2. Gothic 12
3. Orator 10
4. Gothic letters
5. Script letters

C.
____ 1.
x 2.
x 3.
x 4.
____ 5.
x 6.
____ 7.
x 8.

D.
1. Thumbnail sketch
2. Rough draft layout
3. Comprehensive layout

PART 2

A.
1. a
2. b
3. j
4. c
5. d
6. f
7. i
8. a
9. h
10. e

B. Any four of the following:

1. Lettering
2. Borders
3. Typewritten materials
4. Handwriting
5. Line drawings
6. Halftones
7. Screen patterns

C. 7 1.
3 2.
1 3.
4 4.
6 5.
2 6.
5 7.

D. ✓ 1.
✓ 2.
3.
4.
✓ 5.
✓ 6.
✓ 7.
8.

[redacted]

UNIT III

COPY PREPARATION FOR PASTEUP MASTERS

INFORMATION SHEET 1--LAYOUT OF PASTEUP MASTER

I. Terms and Definitions

A. Balance--a pleasing placement of items on a page

B. Comprehensive layout--the final prepared copy that looks as much like the printed copy as possible

C. Illustration--a drawing

D. Layout--the plan of any piece to be printed

E. Lettering--letters that are not produced on a typewriter

F. Rough layout--a layout drawn to actual size with the fine points not included

G. Thumbnail sketch--one of several small drawings which shows a possible way of doing a layout for a printed copy

H. Typewriter element--the removable printing ball or daisywheel on a typewriter

II. Considerations in Copy Preparation

A. What equipment will be used to make a duplicated master for the pasteup master?

1. Thermal master maker--used to prepare a master for the fluid duplicator

2. Electronic stencil maker--used to prepare a stencil for the stencil duplicator

3. Photocopier--used to make photocopies (ie., Xerox)

4. Platemaking process--used to prepare offset masters for the offset duplicator

B. What type of paper will be used:

(See UNIT II--PAPER CHARACTERISTICS)

C. What color ink will be used?

D. What type of letter style and size will be used?

(NOTE: See TM-1.)

1. Typewriter element styles

a.	Italic	*abcdefghijklmn*	*ABCDEFGHIJKLMN*
b.	Script	abcdefghijklmn	ABCDEFGHIJKLMN
c.	Adjutant	abcdefghijklmn	ABCDEFGHIJKLMN
d.	Orator	ABCDEFGHIJKLMN	ABCDEFGHIJKLMN
e.	Courier	abcdefghijklmn	ABCDEFGHIJKLMN
f.	Prestige elite	abcdefghijklmn	ABCDEFGHIJKLMN
g.	Prestige pica	abcdefghijklmn	ABCDEFGHIJKLMN
h.	Gothic	abcdefghijklmn	ABCDEFGHIJKLMN

2. Lettering (refers to non-typed letters)

    a. Gothic

    ABCDEFGHIJKLMN

    b. Roman

    ABCDEFGHIJKL

    c. Script

    ABCDEFG

E. What photographs and illustrations will be used?

F. What effect or tone needs to be displayed?

(NOTE: See TM-2.)

1. Formal message--formal type
2. Strong, powerful message--bold type
3. Light and airy message--dainty type
4. Informal message--informal type

G. What type of balance needs to be displayed

(NOTE: See TM-3.)

1. Formal balance
    a. Each item that appears on one side of the layout also appears on the other side.
    b. Usually built around a vertical center line
2. Informal balance
    a. Items do not appear on both sides of the layout.
    b. Items are distributed so their weights balance each other.

III. A Layout Should:
- A. Attract attention (eye catcher)
- B. Create interest
- C. Create desire
- D. Tell how to satisfy the desire

IV. Three Stages of a Layout
- A. Thumbnail sketch

  (NOTE: See TM-4.)

  1. A sketch used to jot ideas to show how finished ideas will look
  2. A small, quick drawing
  3. Two or three thumbnail sketches should be made to show various ideas
- B. Rough draft layout

  (NOTE: See TM-5.)

  1. Should be drawn to actual size
  2. Aids in seeing spacing, balance, and emphasis
  3. Aids in selecting type styles and other elements
- C. Comprehensive layout

  (NOTE: See TM-6.)

  1. Actual size
  2. Looks as much like final printed copy as possible
  3. Actual photographs or illustrations

LETTER STYLES

Italic	*abcdefghijklmnopqrstuvwxyz*	*ABCDEFGHIJKLMNOPQRSTU*
Script	*abcdefghijklmnopqrstuvwxyz*	ABCDEFGHIJKLMNOPQRSTU
Adjutant	abcdefghijklmnopqrstuvwxyz	ABCDEFGHIJKLMNOPQRSTU
Orator	ABCDGHIJKMNOPQRUVWXYZ	ABCDEFGHIKLPQRSUVWX
Courier	abcdefghijklmnopqruvwxyz	ABCDEFGHIKLPQRS
Prestige	abcdefghijklmnopqrstuvwxyz	ABCDEFGHIJKLMNOPQRSTU
Gothic	abcdefghijklmnopqrstuvwxyz	ABCDEFGHIJKLMNOPQRSTU

GOTHIC	**ABCDEFGHIJKLMN**
ROMAN	**ABCDEFGHIJKL**
SCRIPT	*ABCDEFG*

DIFFERENT TONES

Prescriptions Fulfilled

Create a whole new image . . . right before your eyes! Select from the largest collection of high quality, high fashion eyewear you've ever seen anywhere. Major credit cards accepted.

Extraordinary Eyewear ⟜ Optical Delights

FORMAL

Ruffy®
mufflers
brakes–shocks

Once you install a Ruffy® muffler you never pay again.

STRONG

Brighten your day
with flowers from

Paul's Florist

Specializing in Distinctive & Original
• Funeral Designs • Wedding Bouquets & Decorations
• Cut Flowers & Floral Arrangements

LIGHT AND AIRY

LET'S BAND TOGETHER

"MUSICAL MARKET OF THE WEST"

THE HIP SHOT MUSIC COMPANY

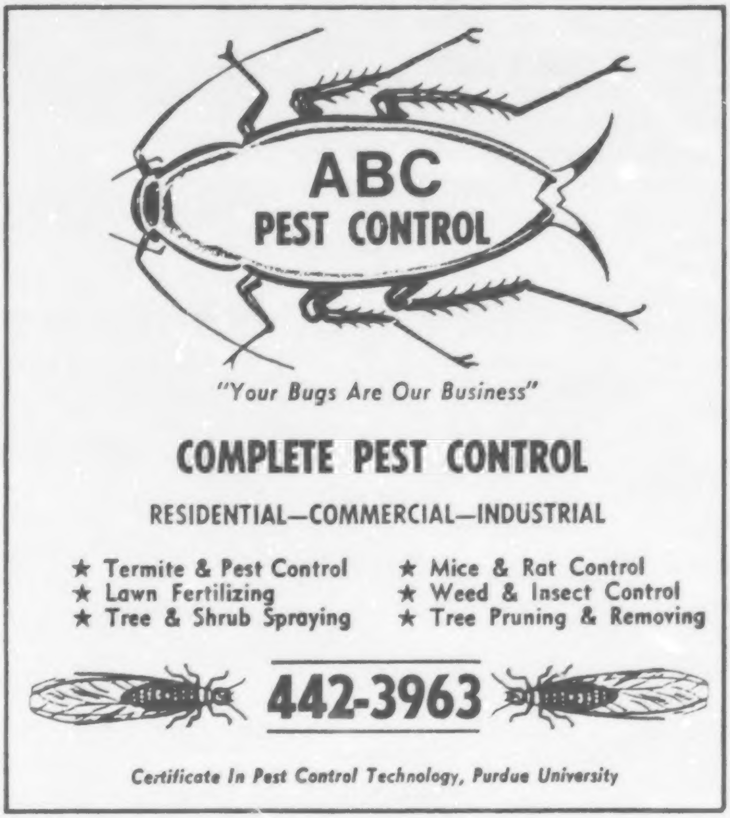
VISA

777 W. Daggit, Ft. Worth

INFORMAL

TYPES OF BALANCE

FORMAL



ABC
PEST CONTROL

"Your Bugs Are Our Business"

COMPLETE PEST CONTROL

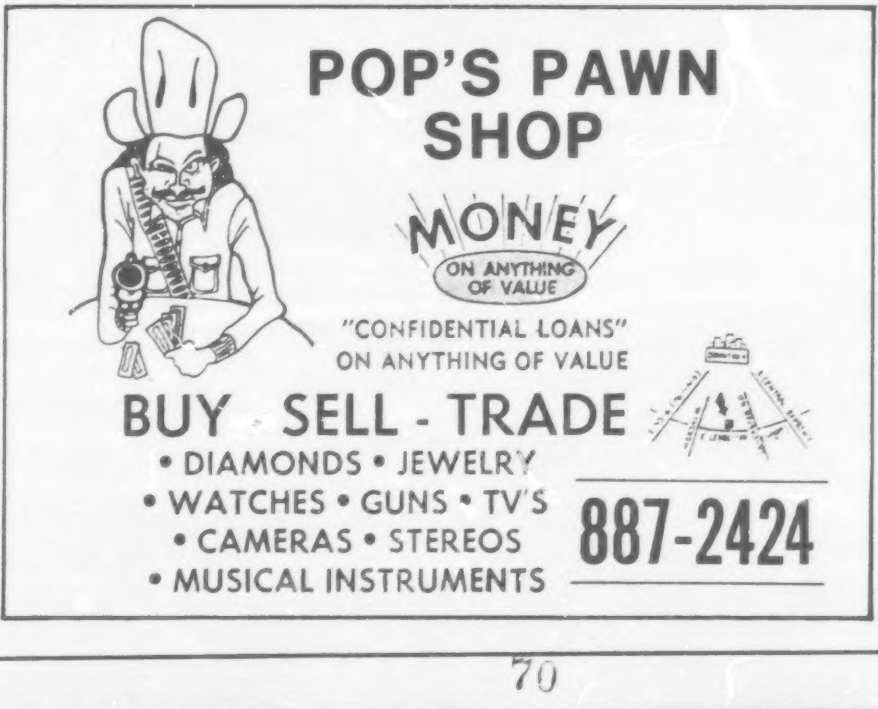
RESIDENTIAL—COMMERCIAL—INDUSTRIAL

★ Termite & Pest Control
★ Lawn Fertilizing
★ Tree & Shrub Spraying
★ Mice & Rat Control
★ Weed & Insect Control
★ Tree Pruning & Removing

442-3963

Certificate In Pest Control Technology, Purdue University

INFORMAL



POP'S PAWN SHOP

MONEY
ON ANYTHING OF VALUE

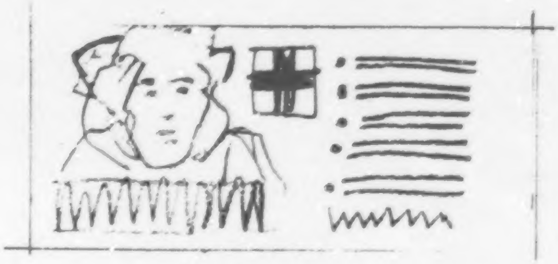
"CONFIDENTIAL LOANS"
ON ANYTHING OF VALUE

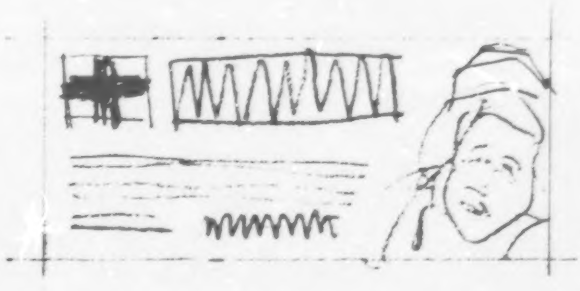
BUY - SELL - TRADE

- DIAMONDS • JEWELRY
- WATCHES • GUNS • TV'S
- CAMERAS • STEREOS
- MUSICAL INSTRUMENTS

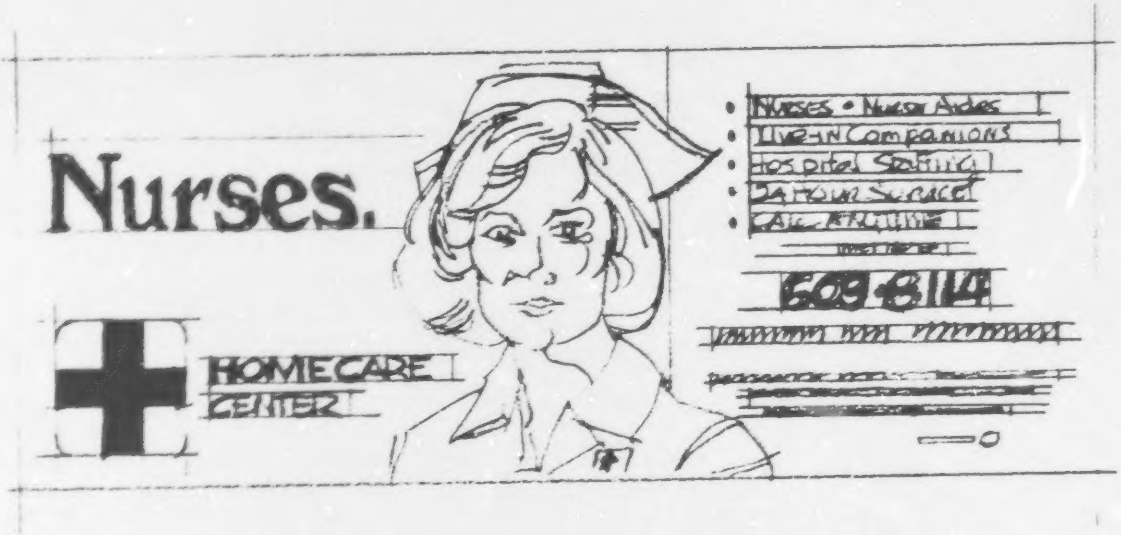
887-2424

THUMBNAIL SKETCHES

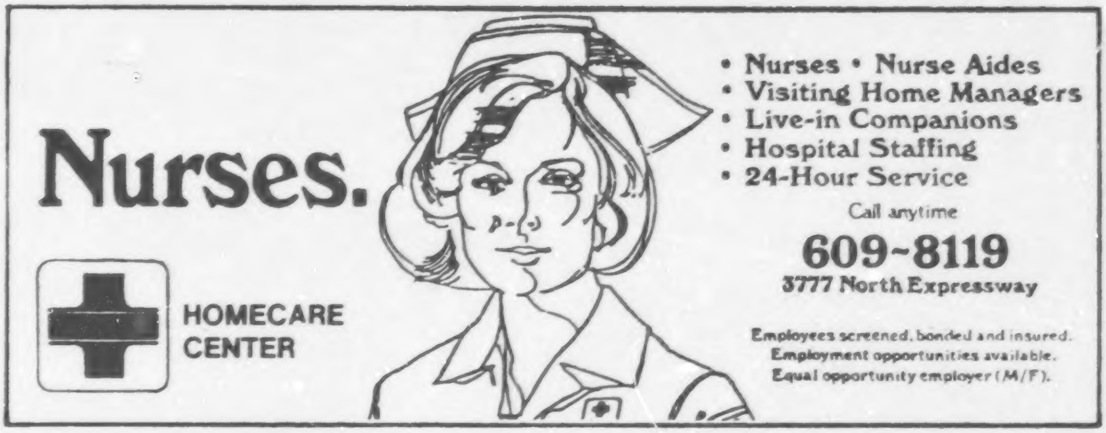




ROUGH DRAFT LAYOUT



COMPREHENSIVE LAYOUT



Nurses.

HOMECARE
CENTER

- Nurses • Nurse Aides
- Visiting Home Managers
- Live-in Companions
- Hospital Staffing
- 24-Hour Service

Call anytime

609~8119

3777 North Expressway

Employees screened, bonded and insured.
Employment opportunities available.
Equal opportunity employer (M/F).

BEST COPY AVAILABLE

UNIT III

COPY PREPARATION FOR PASTEUP MASTERS

INFORMATION SHEET 2--PASTEUP MASTERS

I. Terms and Definitions

A. Base sheet--a paper on which the cutouts are placed

B. Cutouts--artwork, lettering, typewritten materials, etc. which have been cut out to be placed on a base sheet

C. Guide sheet--the paper placed under the base sheet which helps to draw the guidelines (vertical and horizontal lines) on the base sheet

D. Halftone--a tone pattern consisting of dots of equal density but varying in size

E. Light table--a glass-top table with a light under the glass

F. Line drawing--illustration made with only lines, no shading

G. Non-reproducing pen or pencil--a pale blue pen or pencil which will not show on duplicated copies

H. Pasteup master--a sheet to which cutouts have been waxed

I. T-square--a ruler with a crosspiece or head at one end used in making lines

J. Transparent tape--tape which one can see through

II. Types of Cutouts Used in Pasteups

A. Lettering

B. Borders

C. Typewritten materials

D. Handwriting

E. Line drawing

F. Halftones

G. Screen patterns

III. Line Drawings and Halftones

(NOTE: See TM-5 and TM-6.)

A. Line drawings are made up of only lines, no shading.

B. Halftones

1. Any photograph to be printed must be converted to a halftone--a series of small dots.

2. Before reproduction, the halftone needs to be screened.

IV. Steps for Preparing to Do a Pasteup Master

A. For the best results, use a light table.

B. Use a guide sheet under the base sheet.

C. Use masking tape to attach the two sheets to the table.

D. Using a T-square or a ruler, draw the guidelines on the base sheet with a non-reproducing pencil. (Remember to leave at least 1/2 inch margin.)

E. Arrange the cutouts.

V. Steps for Attaching the Cutouts

A. Wash your hands to keep from smudging the cutouts or the base sheet.

B. Have all the supplies handy.

1. T-square

2. Ruler

3. Non-reproducing pencil

4. Rubber cement or wax

5. Masking tape

6. Art gum eraser

7. Paper

8. Transparent tape

C. Mark the base sheet with a light blue non-reproducing pencil mark to show where the cutout goes.

D. Draw all lines and borders.

1. Make sure they are straight before putting on the cutout.

2. Let lines dry before moving the T-square.

3. Start from the top of the paper and work down.

E. Use a small amount of rubber cement or wax.

1. When rubber cement is used, cutouts cannot be moved once attached.

2. When a waxer is used, the cutouts can be moved, even months later.

F. Make sure all cutouts are attached before the copy is removed.

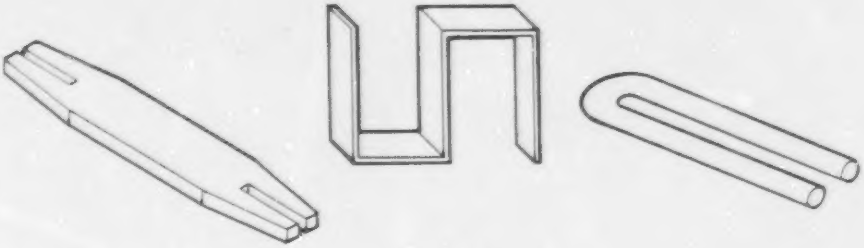
G. Clean up the copy.

1. Erase pencil marks and smudges.

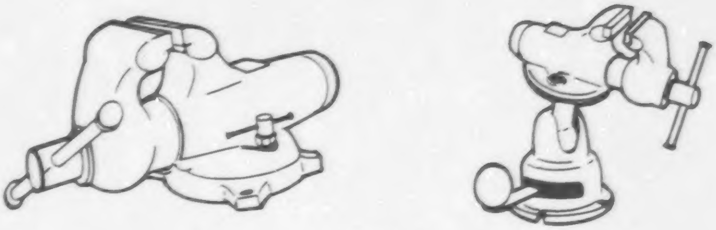
2. Use liquid paper to cover mistakes.

(NOTE: If a thermal copy is going to be made, use a photocopy of the master.)

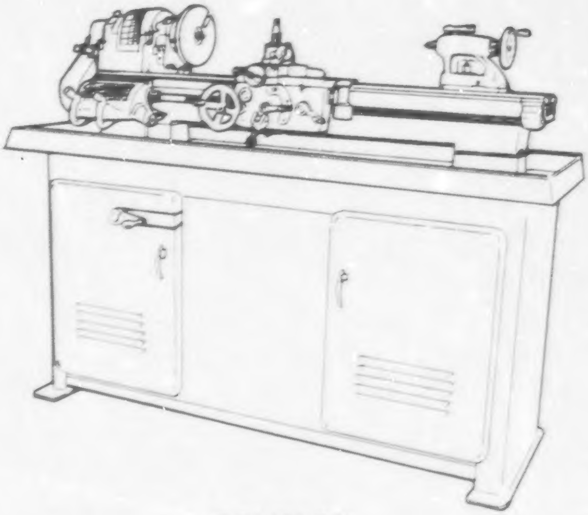
LINE DRAWINGS



SIMPLE

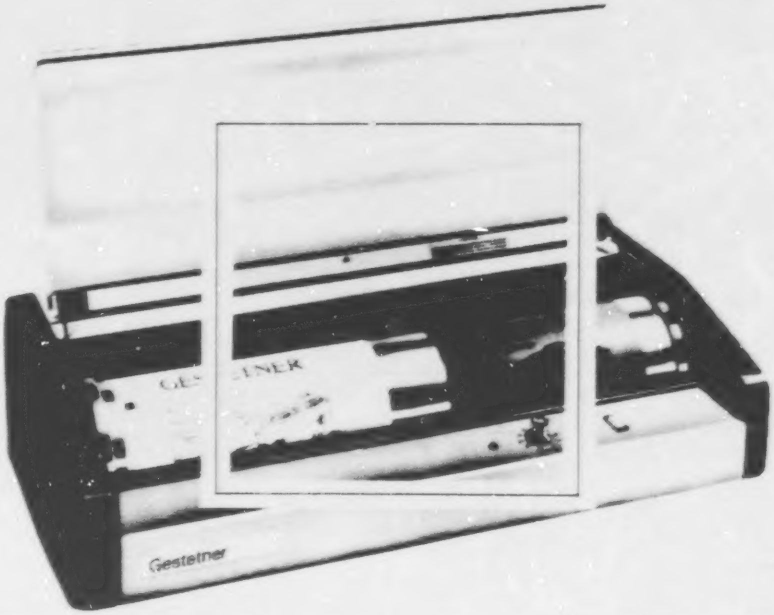


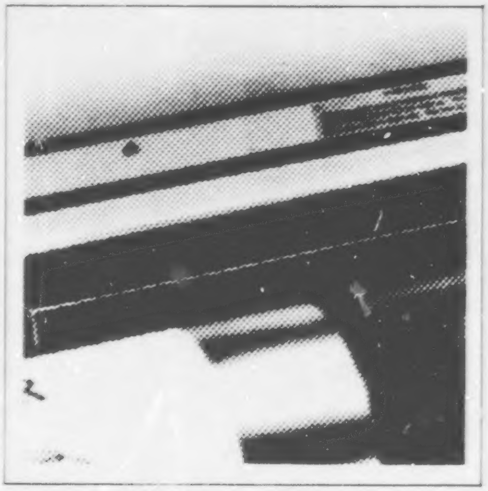
AVERAGE

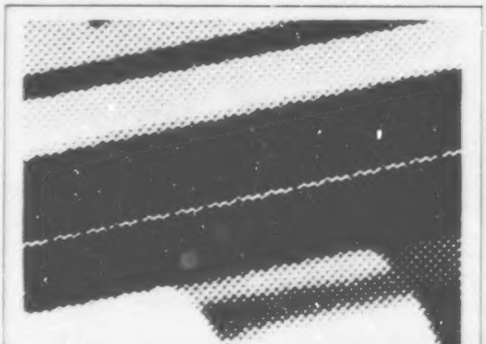


COMPLEX

HALFTONES







COPY PREPARATION FOR PASTEUP MASTERS

ACTIVITY SHEET

ACTIVITY SHEET 1--FORMAL PASTEUP MASTER

Directions: Prepare a formal pasteup master by simply cutting along the dotted lines the cutouts for Activity Sheet 1. Put these cutouts in the appropriate marked places on the base sheet for Activity Sheet 1 that immediately follows the cutout page.

ACTIVITY SHEET 2--INFORMAL PASTEUP MASTER

Directions: Prepare an informal pasteup master by simply cutting along the dotted lines the cutouts for Activity Sheet 2. Put these cutouts in the appropriate marked places on the base sheet for Activity Sheet 2 that immediately follows the cutout page.

ACTIVITY SHEET 3--THUMBNAIL SKETCHES

Directions: Prepare three thumbnail sketches from the different cutouts in Activity Sheet 4. On a thumbnail sketch, you do not put the cutouts.

ACTIVITY SHEET 4--ROUGH LAYOUT

Directions: Prepare two rough layouts from the thumbnail sketches. Use the cutouts for Activity Sheets 3, 4, and 5.

ACTIVITY SHEET 5--COMPREHENSIVE LAYOUT

Directions: Prepare a comprehensive layout from the two rough drafts. When finished, prepare some type of duplicating master. Ask your teacher to show you how to use the equipment and how to make this master.

ACTIVITY SHEET 6--PREPARE A PASTEUP MASTER

Directions: Prepare a pasteup master for the fund raising project sponsored by your club. Use your imagination.

ACTIVITY 1--CUTOUTS

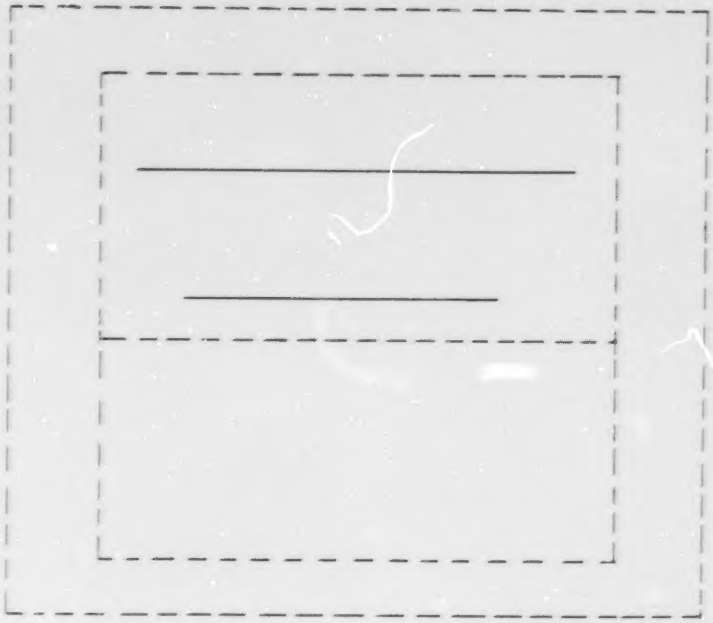
CUT ON DOTTED LINE

Prescriptions Fulfilled

Create a whole new image . . . right before your eyes! Select from the largest collection of high quality, high fashion eyewear you've ever seen anywhere. Major credit cards accepted.

Extraordinary Eyewear — Optical Delights

ACTIVITY 1--BASE SHEET



ACTIVITY 2--CUTOUTS

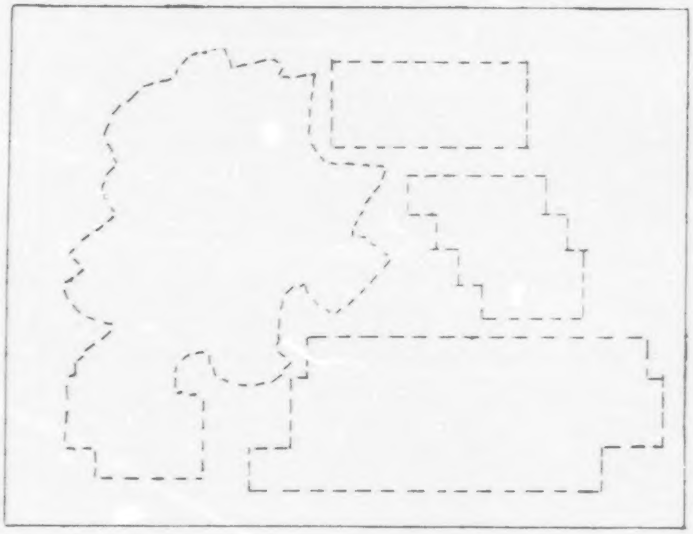
CUT ON DOTTED LINE

LET'S BAND
TOGETHER

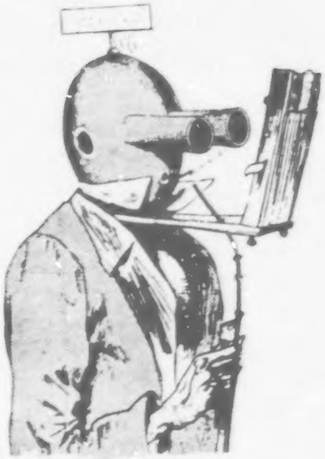
*"MUSICAL
MARKET
OF THE
WEST"*

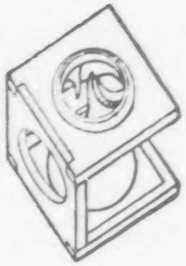
THE HIP SHOT
MUSIC COMPANY
777 W. Daggit, Ft. Worth

ACTIVITY 2--BASE SHEET



ACTIVITY 3,4,5--CUTOUTS





INSTANT COPY SHOP

387-8909

827-5151

Ask For "Tim"

241-5686

270-9033

361-9256

ACTIVITY 3,4,5--CUTOUTS

THE PRINT SHOP

THE PRINT SHOP

Ye Ole Print Shoppe

THE PRINT SHOP

THE PRINT SHOP

QUALITY OFFSET
& INSTANT PRINTING

Printing with a Personal Touch

WE PRINT EVERYTHING!

LOW COST — TOP QUALITY PRINTING — FAST — BY EVERY PROCESS
OFFSET — LETTERPRESS — SILK SCREENING — RAISED PRINT — ENGRAVING — EMBOSSING
HEAT STAMPING — DIE CUTTING — ART & COPY SERVICE — TYPESETTING

- Advertising
- Brochures
- Bulletins
- Business Cards
- Catalog Sheets
- Catalogs
- Envelopes
- Invitations
- Letterheads
- Mailers
- Memo Pads
- NCR Forms
- Price Listing
- Reprints
- Scratch Pads
- Stationery
- Time Cards
- Wedding Ann.
- Work Tickets
- Forms

★ Business Cards ★ Letterheads
★ Envelopes ★ Booklets
★ Special Papers ★ Carbonless Forms
★ Announcements ★ Invitations
★ Typesetting

● QUALITY INSTANT & OFFSET PRINTING ● WEDDING INVITATIONS
● SNAPOUT FORMS ● BOND COPIES ● CUSTOM RAISED PRINTING
● BUSINESS CARDS

UNIT III

COPY PREPARATION FOR PASTEUP MASTERS

UNIT TEST--PART I

A. Match the terms related to layout for pasteup masters to the correct definition by placing the letter in the space at the left.

_____ 1. Comprehensive layout
_____ 2. Illustration
_____ 3. Layout
_____ 4. Lettering
_____ 5. Rough layout
_____ 6. Thumbnail sketch
_____ 7. Typewriter element
_____ 8. Balance

a. one of several small drawings which shows possible ways of doing a layout for a printed copy

b. the plan of any piece to be printed

c. a drawing

d. the final prepared copy that looks as much like the printed copy as possible

e. letters that are not produced on a typewriter

f. a layout drawn to actual size with the fine points not included

g. the removable printing ball or daisywheel on a typewriter

h. a pleasing placement of items on a page

B. Identify the following letter styles and sizes:

Courier
Gothic
Script
Prestige
Orator
Gothic Letters
Roman Letters
Script Letters

______ 1. abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ

______ 2. abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ

______ 3. ABCDEFGHIJKLMNOPQRSTUVWXYZ
ABCDEFGHIJKLMNOPQRSTUVWXYZ

______ 4. **ABCDEFGHIJKLMN**

______ 5. *ABCDEFG*

C. A layout should develop interest for an individual. Place an "x" by the items a layout should do:

______ 1. Distract attention
______ 2. Create desire
______ 3. Catch the eye
______ 4. Create interest
______ 5. Create a desire not to buy the product
______ 6. Tell how to satisfy the desire
______ 7. Be poorly placed on the page
______ 8. Attract attention

D. List the three stages of a layout.

1. ______
2. ______
3. ______

UNIT III

COPY PREPARATION FOR PASTEUP MASTERS

UNIT TEST--PART 2

A. Match the terms related to pasteup masters to the correct definitions by placing the letter in the space at the left.

_____ 1. Base sheet

_____ 2. Cutouts

_____ 3. Guide sheet

_____ 4. Halftone

_____ 5. Light table

_____ 6. Line drawing

_____ 7. Non-reproducing pen or pencil

_____ 8. Pasteup master

_____ 9. T-square

_____10. Transparent tape

a. a sheet onto which cutouts have been waxed

b. artwork, lettering, typewritten materials, etc. which have been cut out to be placed on a base sheet

c. a tone pattern consisting of dots of equal density but varying in size

d. a glass-top table with a light under the glass

e. tape which one can see through

f. illustrations made only with lines

g. paper on which the cutouts are placed

h. a ruler with a crosspiece or head at one end used in making lines

i. a pale blue pen or pencil which will not show on duplicated copies

j. paper placed under the base sheet which helps to draw lines

B. List four types of cutouts used in pasteups.

1. ____________________

2. ____________________

3. ____________________

C. Place in order the steps for attaching cutouts to the base sheet.

_____ 1. Clean the copy.

_____ 2. Mark the base sheet with light blue non-reproducing pencil marks to show where the cutouts go.

_____ 3. Wash hands to keep from smudging the cutouts or the base sheet.

_____ 4. Draw all lines and borders.

_____ 5. Remove the copy after all cutouts are on.

_____ 6. Have all supplies handy.

_____ 7. Use a small amount of rubber cement or wax.

D. Check the steps for preparing to do a pasteup master.

_____ 1. Use a light table.

_____ 2. Use a T-Square.

_____ 3. Draw all lines and borders.

_____ 4. Clean the copy.

_____ 5. Use a guide sheet under the base sheet.

_____ 6. Use masking tape to attach the two sheets to the table.

_____ 7. Arrange the cutouts.

_____ 8. Glue on the cutouts.

UNIT IV

FLUID DUPLICATION

UNIT OBJECTIVE

After completing this unit, the student should be able to identify terms and explain the fluid duplication process. The student should be able to list steps in preparing a spirit master, making a thermal master, and in operating the fluid duplicator. This knowledge will be evidenced through demonstration of preparing a spirit master, a thermal master, and operating a fluid duplicator, and satisfactorily completing a unit test.

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student should be able to:

1. Match parts of the fluid duplicator with their correct definitions
2. Explain the fluid duplicating operation
3. Identify the procedures in preparing a spirit master and thermal master
4. Name the proper procedures in fluid duplicator operation
5. List advantages and disadvantages of using a fluid duplicator
6. Identify parts of the fluid duplicator
7. Identify the parts of a spirit master and thermal master
8. Demonstrate the ability to:
    a. Prepare a spirit master
    b. Operate a thermofax
    c. Operate the fluid duplicator

UNIT IV

FLUID DUPLICATION

NOTES TO THE INSTRUCTOR

I. Preparation for Unit

   A. Preview the unit. To utilize this curriculum in the most effective way, you should review each unit of instruction and localize and individualize the material for your program.

   B. Design a bulletin board about duplication.

   C. Prepare materials for duplication. Students will take more pride in their work if you will give them the material that will be used to duplicate.

      1. Materials you will be using

      2. Materials other teachers will be using

   D. Prepare a poster which describes how to operate the fluid duplicator and hang it on the wall by your duplicator.

II. Objective Sheet

   A. Review all objectives and then add or delete to meet your own program needs.

   B. Review and discuss with the students each specific objective as it relates to the program.

III. Information and Activity Sheets

   A. INFORMATION SHEET 1--PREPARING THE SPIRIT MASTER

      1. Give the students a spirit master, and explain the set to them.

      2. Explain how to type and correct errors on the spirit master (Do ACTIVITY SHEETS 1-3).

      3. Do ACTIVITY SHEET 4.

   B. INFORMATION SHEET 2--OPERATING THE THERMOFAX

      1. Give the students a thermal master and explain the set to them.

      2. Explain how to operate a thermofax.

      3. Do ACTIVITY SHEET 5.

   C. INFORMATION SHEET 3--OPERATING THE FLUID DUPLICATOR

      1. Show students the fluid duplicator parts and explain their functions.

2. Explain how to operate your fluid duplicator. Use the poster you have prepared.

3. Explain the advantages and disadvantages of fluid duplication.

4. Do ACTIVITY SHEET 6.

IV. Transparency Masters

A. TM-1--THE FLUID SPIRIT MASTER

B. TM-2--CORRECTING MASTER SHEET

C. TM-3--THERMAL PROCESS

D. TM-4--PARTS OF A FLUID DUPLICATOR

E. TM-5--FLUID DUPLICATOR MACHINE PARTS

V. Evaluation

A. The unit test is divided into three parts.

(NOTE: Each part covers the corresponding Information Sheet.)

B. Various approaches may be used in testing.

(NOTE: Research indicates frequent testing on small units is more effective in developing retention for students.)

1. Give each part of the test after completion of each Information and Activity Sheet.

2. Use the test as an assignment for the student.

3. Some students may respond better to an oral test with the instructor.

4. You should add evaluation questions for any material added to the unit.

5. You may want to test the students as to how they operate the fluid duplicator.

VI. Answers to Activity Sheets and Unit Test

A. Answers are based upon information covered in the unit.

B. For convenience in grading, add answer sheets to correspond to questions added to the test.

VII. References

A. Bauer, Dennis E. and John W. Strahl. Office Reproduction Processes. San Francisco: Canfield Press, 1975.

B. Fasnacht, Harold and others. How to Use Business Machines. 3rd ed., New York: McGraw-Hill Book Company, 1969.

C. Fluid Duplicator Operator's Manual.

D. Gregg, John Robert et al. Applied Secretarial Procedures. 7th ed., Cincinnati: South-Western Publishing Co., 1974.

E. Kupsh, Joyce. Duplicating: Machine Operation and Decision Making. Encino, Cal.: Glencoe Publishing Co., Inc., 1972.

F. Pasewark, William R. and Mary Ellen Oliverio. Clerical Office Procedures. 6th. ed., Cincinnati: South-Western Publishing Co., 1978.

G. Pasewark, William R. Duplicating Machine Processes. 2nd ed., Cincinnati: South-Western Publishing Co., 1975.

H. Stewart, Jeffery R. and Judith A. Scharle. Office Reprographics. New York: McGraw-Hill, Inc., 1979.

UNIT IV

FLUID DUPLICATION

ANSWERS TO ACTIVITY SHEETS

ACTIVITY SHEETS 1-6

Evaluated to the satisfaction of the instructor.

UNIT IV

FLUID DUPLICATION

ANSWERS TO TEST

PART 1

A. 1. a
2. a
3. a
4. b
5. c

B. ______ 1.
__x___ 2.
__x___ 3.
__x___ 4.
______ 5.
__x___ 6.
______ 7.
______ 8.
__x___ 9.

C. 1. Roll the spirit master forward in the typewriter.
2. Remove the error from the back side of the master sheet with a razor blade.
3. Tear the corner of the carbon sheet and put it behind the error on top of the old carbon sheet.
4. Type the correct letters.
5. Take out the extra piece of carbon.

PART 2

A. 1. a
2. d
3. c
4. b
5. d

B. __x___ 1.
______ 2.
__x___ 3.
__x___ 4.
______ 5.
__x___ 6.
______ 7.
__x___ 8.
______ 9.
______ 10.

PART 3

A. 1. f
2. b
3. g
4. h
5. c
6. i
7. d
8. j
9. a
10. e

B.
x 1.
2.
x 3.
x 4.
5.
x 6.
7.
x 8.

C. Four
Fluid tank
Feed tray
Cylinder
Carbon side up
Adjustments
Counter
Motor switch
Cylinder
Protection sheet

UNIT IV

FLUID DUPLICATION

INFORMATION SHEET 1--TYPING A SPIRIT MASTER

I. The Spirit Master Is Made up of:

(NOTE: See TM-1)

A. Master sheet--the white sheet which you write or type on

B. Protection sheet--the tissue used to keep the master sheet free from smudges

C. Carbon sheet--the sheet coated with a wax-like dye which transfers to the master sheet

II. Typing a Spirit Master

A. Clean the typewriter

B. Take out the protection sheet.

C. Put the spirit master in the typewriter.

D. Set margins for any typing. Leave at least 1/2 inch at the top and bottom.

E. When you are finished, put the protection sheet back until you are ready to run the copy.

III. Correcting the Spirit Master

(NOTE: See TM-2)

A. Correcting by retyping a letter or word in the same place

1. Roll the spirit master forward in the typewriter and open the spirit master.

2. Remove the error from the back side of the master sheet with a razor blade, knife, or eraser.

3. Tear the corner of the carbon sheet and put it behind the error on top of the old carbon sheet.

4. Type the correct letter(s).

5. Take out the extra piece of carbon.

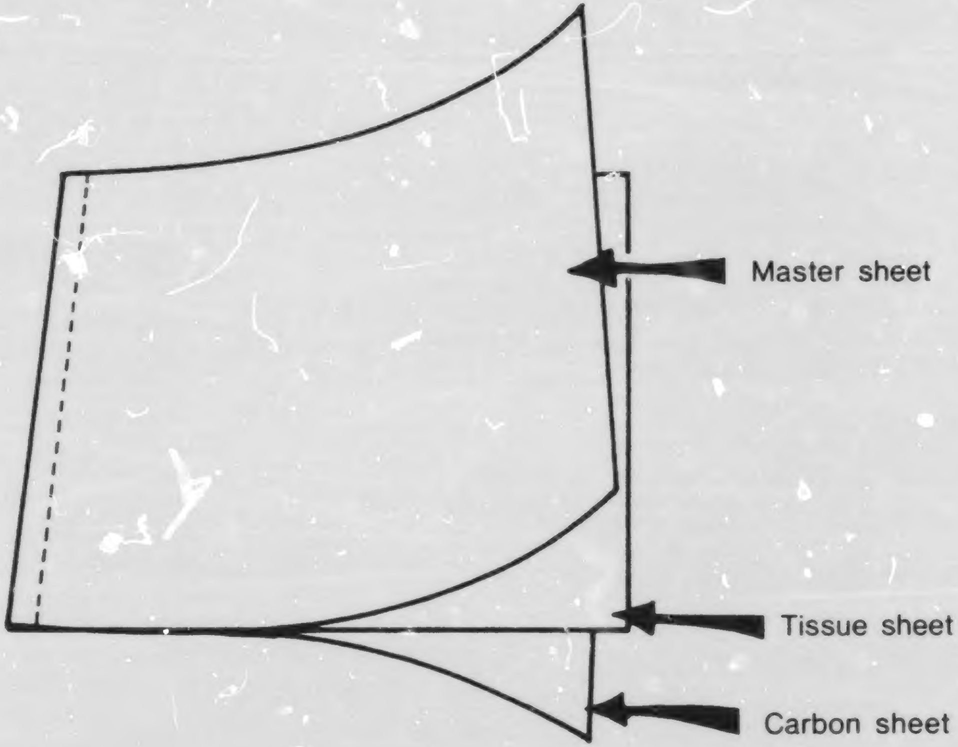
6. Don't worry about the strikeover on the front of the master.

B. Correcting a letter, word, or line which does not need retyping

1. Cover the mistake with transparent tape.

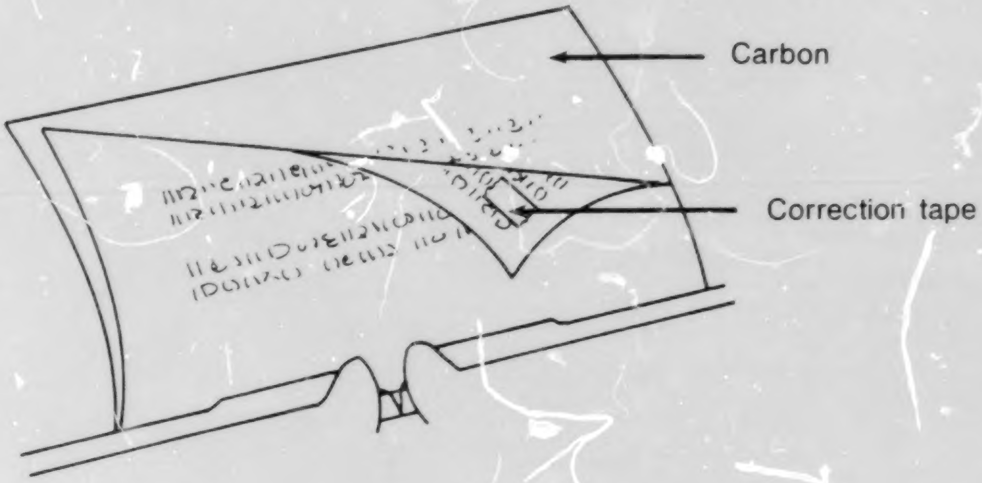
2. Scrape off the mistake with a razor blade or knife.
3. Cut the mistake out of the master (The whole master sheet is not needed to run copies).
4. To mark out smudges, use a regular pencil or a special white pencil.

THE SPIRIT MASTER

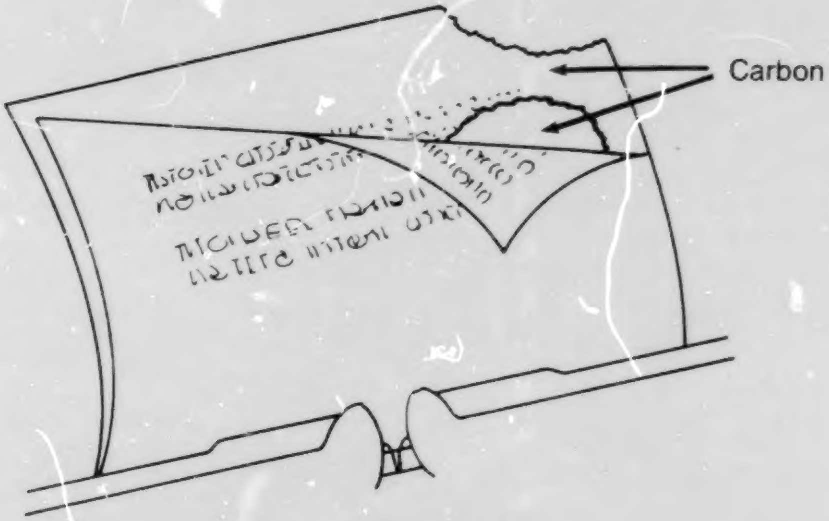


TM-1

CORRECTING MASTER SHEET



REMOVING ERROR ONLY



REMOVING ERROR AND REPLACING A LETTER

UNIT IV

FLUID DUPLICATION

ACTIVITY SHEET 1--TYPING A MASTER

Direction: Divide a spirit master in half. Type the following memo. Leave a one-inch top and side margin. Double space the heading and triple space between the subject line and the body.

MEMO

TO: All Department Heads

FROM: John Doe

DATE: October 12, 1983

RE: STAFF MEETING

On November 12, there will be a meeting of all department heads. Attached is the agenda for the meeting.

xxx

Attachment

UNIT IV

FLUID DUPLICATION

ACTIVITY SHEET 2--TYPING A SPIRIT MASTER

Directions: Divide a spirit master in half. Center the following agenda horizontally and vertically. On the body of the agenda center the longest line for the left margin.

AGENDA FOR STAFF MEETING

November 12, 1983

BOARD ROOM

I. Introduction of New Department Head--John Smith

II. Price Increases

III. Christmas Sales and Procedures

IV. Adjournment

FLUID DUPLICATION

ACTIVITY SHEET 3--TYPING A FLUID SPIRIT MASTER

Directions: Divide a spirit master in half. Type the following memo. Leave a one-inch top and side margin. Double space the heading and triple space between the subject line and the body.

MEMO

TO: All Sales Personnel

FROM: John Doe

DATE: November 1, 1983

RE: Christmas Shoppers

Christmas is once again upon us, and we will be experiencing one of our busiest times. Profits will be up, but so will our losses. Shoplifting is one of our biggest problems this time of year. To keep our losses at a minimum, keep a watchful eye on customers while you are helping a customer.

xx

UNIT IV

FLUID DUPLICATION

ACTIVITY SHEET 4--DRAWING OR WRITING ON A SPIRIT MASTER

Directions:

1. Using a ruler, divide the master in half. Leave tissue sheet in.
2. Using a ruler, divide half of master into half again, creating a fourth. Then divide one of the fourths into half again, creating an eighth. After dividing the master, remove the tissue sheet.
3. On one half of the master, design a sheet of stationery.
4. On the fourth, design a note pad.
5. On the two eighths, design name tags
6. On the above designs, use the following items:
    - a. styli and shading plates
    - b. three or more colors in at least one of the designs (one design must be all purple)
    - c. pencil for the impression
    - d. pen for the impression
    - e. typewriter
    - f. clip art
7. On the above designs, make corrections with:
    - a. razor blade
    - b. transparent tape
    - c. cut out and insert

FLUID DUPLICATION

INFORMATION SHEET 2--OPERATING THE THERMOFAX

I. The Thermofax Process

A. Operates on the principle that dark objects will take in more heat than light objects

B. Allows a paste-up master to be used

(NOTE: Carbon-based pens, pencils, typewriter ribbons, lettering, cutouts, etc., must be used.)

Thermofax
Photography by OCL staff

II. The Thermal Master Is Made up of:

A. Master sheet--the thin white sheet which the paste-up master is copied onto

B. Protection sheet--the tissue used to keep the master sheet free from smudges

C. Carbon sheet--the thin sheet coated with a wax-like dye which transfers to the master sheet

D. Jacket--the backing sheet which holds the master together

III. Thermofax Operation

A. Remove protection sheet from thermal master.

B. Place original on paste-up master face up between the carbon sheet and jacket.

C. Adjust the heat setting for making thermal master (see operations manual).

D. Make test copies for darkness and lightness.

E. Insert master into the thermofax opening.

   1. Once inside, the master is exposed to light.

   2. The light generates heat which contacts with the dark portions on the original producing a reproducing master.

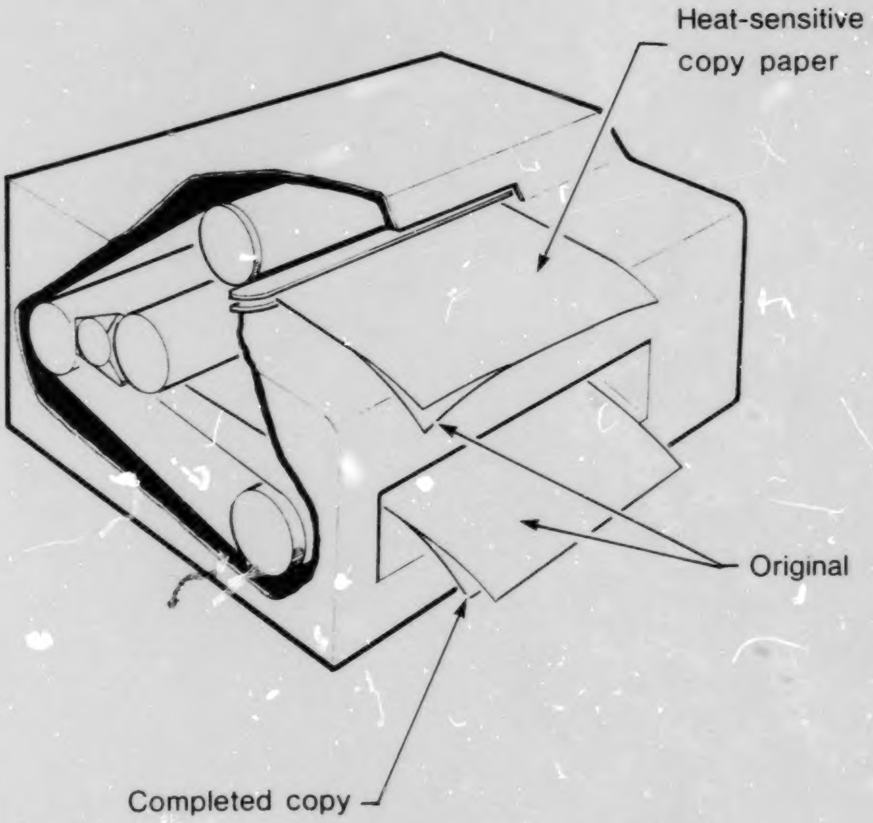
F. Remove the carbon sheet.

G. Do not remove the jacket.

   1. When duplicating, fold the jacket in half and use it to pad the master on the drum for better copy.

   2. For better copies after the master has become weak, pad the master by placing white paper between the drum and the master.

THERMAL PROCESS



UNIT IV

FLUID DUPLICATION

ACTIVITY SHEET 5--DESIGNING A LAYOUT FOR A THERMAL MASTER

Directions: Design an invitation to the faculty to attend the VOCCT open house.

____ 1. Use sheet of paper

_____ 2. Letter guides

____ 3. Typewriter

_____ 4. Paste-up materials from cutouts

_____ 5. Handwritten materials in either art work or handlettering

Use a thermofax to make a thermal master for duplication

NOTE: For further information on layout see the unit entitled, "Copy Preparation for Pasteup Master." For more practice in using the thermofax, use the layout master designed in this unit.

UNIT IV

FLUID DUPLICATION

INFORMATION SHEET 3--OPERATING THE FLUID DUPLICATOR

I. Terms and Definitions

A. Clamp control--lever used to open and close the lock which holds the master against the cylinder

B. Counter--dial that shows the number of copies being printed

C. Cylinder--the drum-like part which holds the master

D. Feed pressure--lever that controls the pressure of the rollers to [illegible] different weights of paper

E. Feed rollers--rollers that rest on top of the paper being fed into the machine

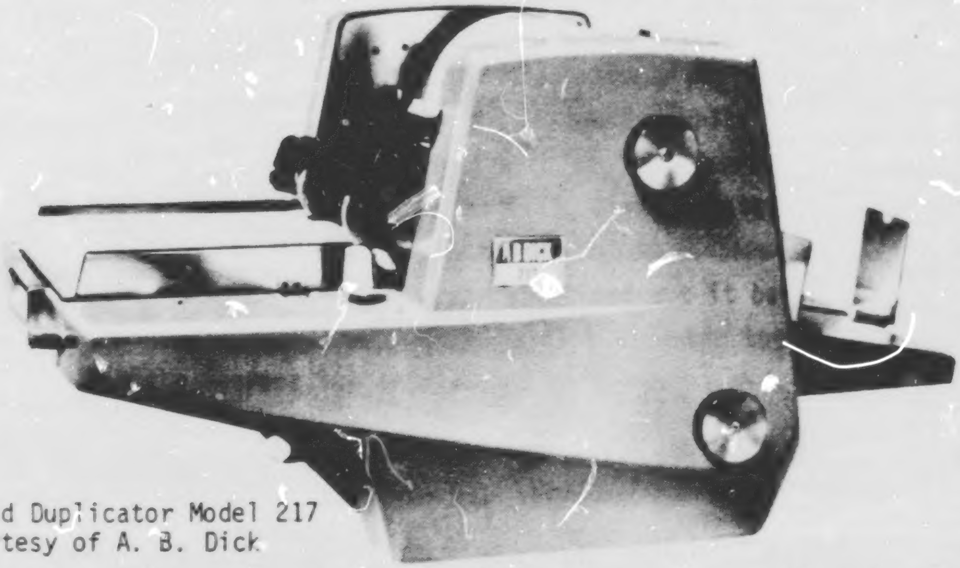
F. Feed tray--tray in which the paper is stacked to be fed into the machine

G. Fluid tank--tank that holds the fluid that wets the paper going into the machine

H. Impression control--lever that controls the lightness and darkness of the printed copy

I. Impression roller--the tube under the cylinder

J. Moistening roller--the tube which dampens the paper to be copied



Fluid Duplicator Model 217
Courtesy of A. B. Dick

II. Fluid Duplication Operation

A. Getting the machine ready

1. Check and add the fluid, if needed.
2. Place and adjust paper on the feed tray.
3. Position the tray which catches the copies.
4. Set the pressure lever.
5. Turn the machine ON.

B. Putting the master on the machine

1. Open the clamp which holds the master on the cylinder.
2. Place the master on the cylinder carbon side up.

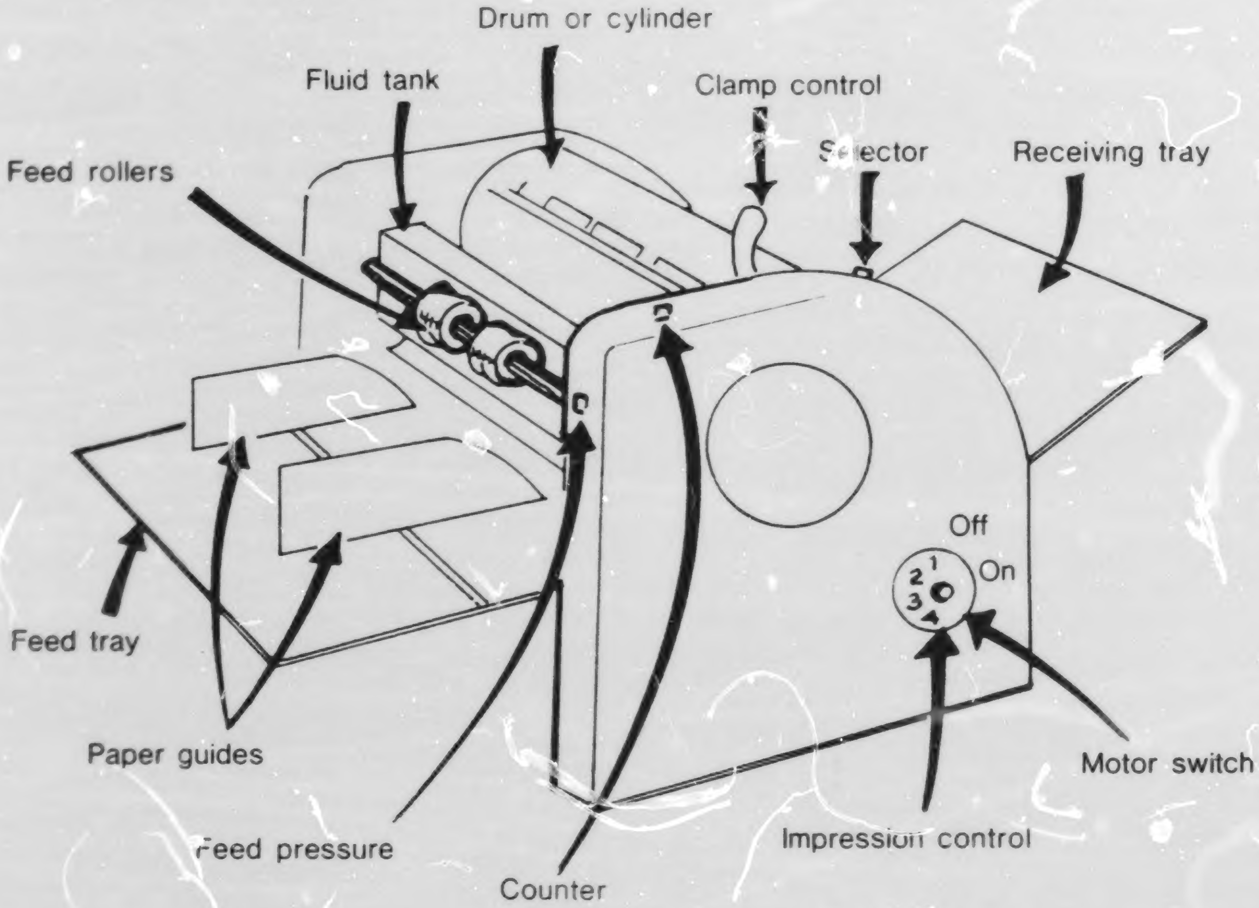
C. Running the copies

1. Lower the feed rollers.
2. Run test copies to check the fluid and make any adjustments.
3. Set the counter.
4. Run copies needed.

D. Finishing the job

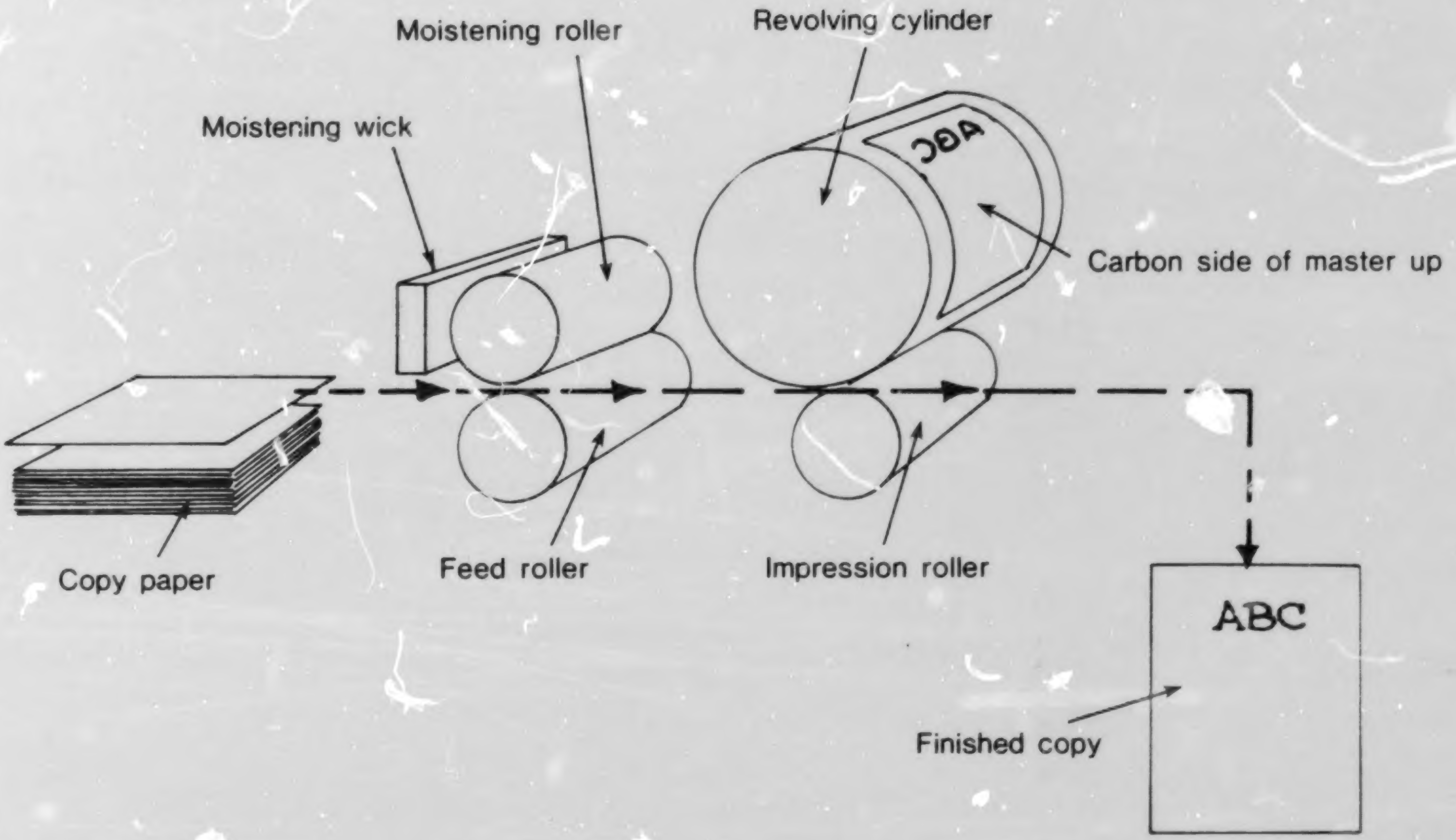
1. Turn OFF the paper feed.
2. Turn OFF the motor switch.
3. Open the clamp lever and take out the master.
4. Close the clamp lever.
5. To file the master
    a. Clip the protection sheet back on.
    b. Throw the carbon sheet away.

PARTS OF A FLUID DUPLICATOR



TM-4

FLUID DUPLICATOR MACHINE PARTS



TM-5

163

UNIT IV

FLUID DUPLICATION

ACTIVITY SHEET 6

Directions: On the fluid duplicator run Activity Sheets 1-5.

UNIT IV

FLUID DUPLICATION

UNIT TEST--PART 1

A. Write the letter of the answer that correctly completes the following statements.

_____ 1. The white sheet in the spirit master which you write or type on is called:

  a. master sheet
  b. protection sheet
  c. carbon sheet

_____ 2. The sheet which is coated with a wax-like dye is called:

  a. carbon sheet
  b. protection sheet
  c. master sheet

_____ 3. The tissue sheet which is used to keep the master free from smudges is called:

  a. protection sheet
  b. carbon sheet
  c. master sheet

_____ 4. When typing a spirit master you should:

  a. type on the protection sheet
  b. take the protection sheet out
  c. keep the protection sheet in the pack

_____ 5. When typing on a master, you should leave at least:

  a. 1/8-inch space at the top and bottom
  b. 1/4-inch space at the top and bottom
  c. 1/2-inch space at the top and bottom

B. Place an "X" by the steps involved in typing a spirit master:

_____ 1. Set the counter.

_____ 2. Feed the spirit master into the typewriter.

_____ 3. Set the margins and tabs.

_____ 4. Correct typing errors.

_____ 5. Prime the machine.

_____ 6. Proofread.

_____ 7. Fill the fluid tank when it becomes low.

_____ 8. Remove the spirit master from the cylinder (drum).

_____ 9. Place the protection sheet between the master sheet and the carbon sheet.

C. Briefly explain how to correct an error on a master sheet.

UNIT IV

FLUID DUPLICATION

UNIT TEST--PART 2

A. Write the letter of the answer that correctly completes the following statements.

_____ 1. The thin white sheet in the thermal master which the paste-up master is copied on to is called

a. Master sheet

b. Protection sheet

c. Carbon sheet

d. Jacket

_____ 2. The backing sheet which holds the master together is called

a. Master sheet

b. Protection sheet

c. Carbon sheet

d. Jacket

_____ 3. The thin sheet coated with a wax-like dye which transfers to the master sheet is called

a. Master sheet

b. Protection sheet

c. Carbon sheet

d. Jacket

_____ 4. The tissue used to keep the master sheet free from smudges is called

a. Master sheet

b. Protection sheet

c. Carbon sheet

d. Jacket

____ 5. The thermofax process

- a. is a wet chemical process
- b. operates on the principle that dark objects will take in more heat than light objects
- c. allows a paste-up master to be used
- d. both b and c

B. Place an "X" by the steps involved in making a thermofax master.

____ 1. Remove the protection sheet

____ 2. Prime the machine

____ 3. Adjust the heating setting

____ 4. Insert master

____ 5. Attach master

____ 6. Remove the carbon sheet

____ 7. Remove the jacket

____ 8. Place original or paste-up master face-up between the carbon sheet and jacket

____ 9. Set the counter

____ 10. Correct typing errors

UNIT IV

FLUID DUPLICATION

UNIT TEST--PART 3

A. Match the terms related to fluid duplication to the correct definition by placing the letter in the space at the left.

_____ 1. Clamp control

_____ 2. Counter

_____ 3. Cylinder

_____ 4. Feed pressure

_____ 5. Feed rollers

_____ 6. Feed tray

_____ 7. Fluid tank

_____ 8. Impression control

_____ 9. Impression roller

_____ 10. Moistening roller

a. The tube under the cylinder

b. Dial that shows the number of copies being made

c. Rollers that rest on top of the paper being fed into the machine

d. Tank that holds the fluid that wets the paper going into the machine

e. The tube which dampens the paper to be copied

f. Lever that is used to open and close the lock which holds the master against the cylinder

g. The drum-like part which holds the master

h. Lever that controls the pressure of the roller to handle different weights of paper

i. Tray where the paper is stacked to be fed into the machine

j. Lever that controls the lightness and darkness of the printed copy

B. Place an "X" beside those steps involved in fluid duplicator operation:

_____ The machine is primed.

_____ The drum of the machine is removed.

_____ The fluid tank is filled if low.

_____ The paper is fanned.

_____ The master is attached to the impression control.

_____ A trial run of four (4) to five (5) copies is made.

_____ The master is never removed from the drum.

_____ The counter on the fluid duplicator is set.

C. Fill in the blank with the correct word: You may use the same word twice. Some words will not be used.

There are ____________ basic steps involved in operating a fluid duplicator. The first step is getting the machine ready. To get the machine ready, you must check the fluid. If needed, add fluid to the ____________. Paper should be placed in the ____________ and the receiving tray needs to be positioned to catch the duplicated copies. When putting the master sheet on the ____________, the clamp is used to hold the master on the cylinder. The master sheet should be placed ____________. A few test copies should be run to check the fluid and to make any ____________. After all of the adjustments are made, set the ____________ and run as many copies as needed. When the job is finished, turn off the paper feed and the ____________. The master sheet needs to be removed from the ____________. If the master sheet is to be filed, attach the ____________ to the master sheet.

Protection sheet

Fluid

Counter

Adjustments

Duplicated

Cylinder

Clamp

Fluid tank

Carbon side up

Feed tray

Motor switch

Receiving tray

Four

STENCIL DUPLICATION

UNIT OBJECTIVE

After completing this unit, the student should be able to identify terms relating to stencil duplication and their definitions, describe the stencil duplication process and procedures involved, and be able to type a stencil, operate an electronic stencil maker and a stencil duplicator. This knowledge will be evidenced through demonstration and by satisfactorily completing a unit test.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to:

1. Match terms relating to stencil duplication with their correct definitions
2. Describe the stencil duplication process
3. List the four parts of a stencil pack
4. Name the types of styli used in stencil duplication
5. Put in order the steps for typing a stencil
6. Put in order the steps in correcting a stencil
7. Give the procedures for operating an electronic stencil maker
8. Give the procedures for operating a stencil duplicator
9. List the causes of faulty reproduction
10. List the advantages and disadvantages of stencil duplicators
11. Demonstrate the ability to:
    a. Label parts of a stencil duplicator
    b. Use the stylus
    c. Type a stencil
    d. Operate an electronic stencil maker
    e. Operate a stencil duplicator

STENCIL DUPLICATION

NOTES TO THE INSTRUCTOR

I. Preparation for the Unit

   A. Preview the unit. To utilize this curriculum in the most effective way, you should review each unit of instruction and localize and individualize the material for your program.

   B. Design a bulletin board about duplication.

   C. Prepare materials for duplication. Students will take more pride in their work if you will give them the material that will be used to duplicate.

      1. Materials you will be using

      2. Materials other teachers will be using

   D. On ACTIVITY SHEET 4, you will need to have various pictures that students may use to trace.

   E. Prepare a poster which describes how to operate the stencil duplicator and hang it on the wall by your duplicator.

II. Objective Sheet

   A. Review all objectives and then add or delete to meet your own program needs.

   B. Review and discuss with the students each specific objective as it relates to the program.

III. Information and Activity Sheets

   A. INFORMATION SHEET 1--PREPARING A STENCIL

      1. Explain the terms and definitions to the students (Do ACTIVITY SHEET 1--WORD FIND).

      2. Give the students a stencil and explain the stencil pack and the guide marks (Do ACTIVITY SHEET 2--A STENCIL).

      3. Explain how to type and correct errors on the stencil (Do ACTIVITY SHEET 3--TYPING STENCILS).

      4. Explain the types of styli and how to draw on a stencil (Do ACTIVITY SHEET 4--USING STYLUS). In ACTIVITY SHEET 4 you will need to provide cartoon characters or other easy pictures for students to trace. You could buy coloring books or have students to bring pictures to class. These pictures can be used over and over for tracing.

B. INFORMATION SHEET 2--THE ELECTRONIC STENCIL MAKER

  1. Explain how to operate an electronic stencil maker.

  2. Do ACTIVITY SHEET 5--DESIGNING A LAYOUT FOR AN ELECTRONIC STENCIL MAKER.

C. INFORMATION SHEET 3--OPERATING A STENCIL DUPLICATOR

  1. Show students the stencil duplicator parts and explain their functions.

  2. Explain how to operate your stencil duplicator. Use the poster you have prepared.

  3. Explain the problems associated with stencil duplication.

  4. Explain the advantages and disadvantages of stencil duplicating.

IV. Transparency Masters

(NOTE: Transparency masters are included in the student's manual and can be used as Information Sheets.)

A. TM-1--STENCIL PACK

B. TM-2--STENCIL GUIDE MARKS

C. TM-3--CORRECTING STENCIL

D. TM-4--TYPES OF STYLI

E. TM-5--STENCIL DUPLICATOR

V. Evaluation

A. The Unit Test is divided into two parts.

(NOTE: Each part covers one Information Sheet)

B. Various approaches may be used in testing.

(NOTE: Research indicates frequent testing on small units is more effective in developing retention for students.)

  1. Give each part of the test after completion of each Information and Activity Sheet.

  2. Use the test as an assignment for the student.

  3. Some students may respond better to an oral test with the instructor.

  4. You should add evaluation questions for any material added to the unit.

  5. You may want to test the students as to how they operate the stencil duplicator.

VI. Answers to Activity Sheets and Unit Test

A. Answers are based upon information covered in the unit.

B. For convenience in grading, add answers to correspond to questions added to the test.

VII. References

A. Bauer, Dennis E. and John W. Strahl. *Office Reproduction Processes*. San Francisco: Canfield Press, 1975.

B. *Fundamentals of Mimeographing*. Chicago: A B Dick Company, 1967.

C. Kupsh, Joyce. *Duplicating: Machine Operation and Decision Making*. Encino, Cal.: Glencoe Publishing Co., Inc., 1972.

D. Meehan, James R., William R. Pasewark and Mary Ellen Oliverio. *Clerical Office Procedures*. 5th ed., Cincinnati: South-Western Publishing Co., 1973.

E. Pasewark, William R. *Duplicating Machine Processes*. 2nd. ed., Cincinnati: South-Western Publishing Co., 1975.

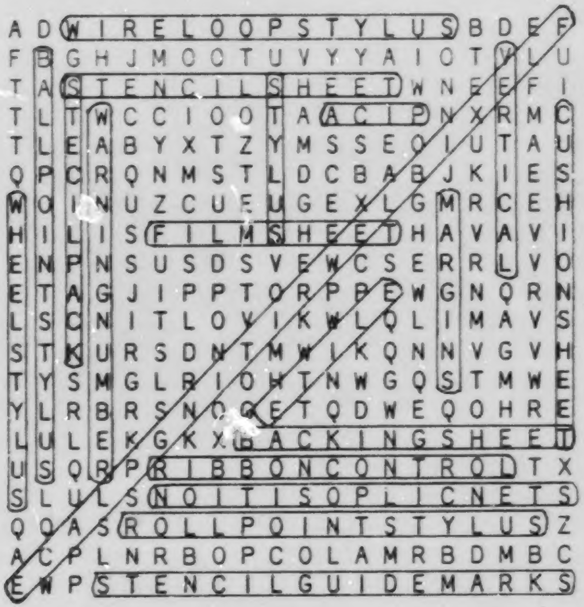
F. *Stencil Duplicator Operator's Manual*.

G. Stewart, Jeffery R. and Judith A. Scharle. *Office Reprographics*. New York: McGraw-Hill, Inc., 1979.

STENCIL DUPLICATION

ANSWERS TO ACTIVITY SHEETS

ACTIVITY SHEET 1



```
A D W I R E L O O P S T Y L U S B D E F
F B G H J M O O T U V Y Y A I O T V L U
T A S T E N C I L S H E E T W N E E F I
T L T W C C I O O T A A C I P N X R M C
T L E A B Y X T Z Y M S S E O I U T A U
Q P C R Q N M S T L D C B A B J K I E S
W O I N U Z C U E U G E X L G M R C E H
H I L I S F I L M S H E E T H A V A V I
E N P N S U S D S V E W C S E R R L V O
E T A G J I P P T O R P P E W G N Q R N
L S C N I T L O V I K W L Q L I M A V S
S T K U R S D N T M W I K Q N N V G V H
T Y S M G L R I O H T N W G Q S T M W E
Y L R B R S N O G E T Q D W E Q O H R E
L U L E K G K X B A C K I N G S H E E T
U S Q R P R I B B O N C O N T R O L T X
S L U L S N O I T I S O P L I C N E T S
Q Q A S R O L L P O I N T S T Y L U S Z
A C P L N R B O P C O L A M R B D M B C
E W P S T E N C I L G U I D E M A R K S
```

ACTIVITY SHEET 2

Problem 1

1. Film sheet
2. Stencil sheet
3. Cushion sheet
4. Backing sheet

Problem 2

1. Cylinder holes
2. Stub
3. Top edge paper guide
4. Typewriter scale
5. Vertical line numbers
6. Postal card area
7. Side margin
8. Area of reproduction
9. Center of stencil
10. Warning numbers for 11-inch paper
11. Warning numbers for 14-inch paper

ACTIVITY SHEETS 3, 4, 5, and 6

Evaluated to the satisfaction of the instructor

STENCIL DUPLICATION

ANSWERS TO UNIT TEST

PART 1

A. 1. e
2. o
3. f
4. g
5. h
6. n
7. d
8. m
9. c
10. b
11. P
12. i

B. 1. Stencil sheet
2. Cushion sheet
3. Backing sheet
4. Film sheet

C. _b_
_d_
_a_
_e_
_f_
_c_

D. 1. Roll master up and remove the film sheet.
2. Rub over the error gently with a paper clip.
3. Lift the stencil sheet out and brush the correction fluid over the error.
4. Put film sheet back, roll to typing position, and type over the error.

PART 2

A. An electronic stencil maker is a machine which will electronically scan an original master and create a stencil for duplication.

B. ___ 1.
_x_ 2.
_x_ 3.
_x_ 4.
___ 5.
_x_ 6.

PART 3

A. 1. a
2. l
3. k
4. j
5. c
6. h
7. i
8. g
9. d
10. e
11. f
12. b

B. 1. a
   2. b
   3. b
   4. c
   5. a

C. 1. Three of the following:

      a. Equipment costs are low.
      b. Copies are of very good quality.
      c. Equipment is easy to operate.
      d. Stencils can be stored and reused.
      e. Copies do not cost much.

   2. Three of the following:

      a. The final copies not as professional as offset duplicator.
      b. Limited copies from stencil.
      c. A stencil must be prepared.
      d. Stencil duplicator is messy to operate.

STENCIL DUPLICATION

INFORMATION SHEET 1--PREPARING A STENCIL

I. Terms and Definitions

A. Elite--12 spaces to an inch on a typewriter

B. Margins--the blank spaces around writing or printing on a page

C. Pica--10 spaces to an inch on a typewriter

D. Ribbon Control--a machine part which sets the position of type on the ribbon

E. Stencil pack includes:

1. Stencil sheet--a wax-coated tissue from which copies are duplicated

2. Cushion sheet--a sheet between the stencil sheet and backing sheet which softens the typewriter keys to keep the stencil sheet from tearing

3. Backing sheet--cardboard-like sheet behind the cushion sheet

4. Film sheet--a clear sheet put over the stencil sheet

F. Stencil guide marks--markings on the stencil sheet

G. Stencil position--the ribbon controls on the typewriter used when typing on a stencil

H. Stylus--a tool used to handwrite or trace designs on a stencil

1. Ball-point stylus--a tool used for detailed art work

2. Wire-loop stylus--a tool used for drawing

3. Wheel stylus--a tool used for drawing lines

4. Roll-point stylus--a tool used for writing, signing names, and freehand drawing

I. Warning numbers--numbers which tell how many lines are left on the page

J. Vertical--straight up and down

II. The Stencil Pack

(NOTE: See TM-1)

A. The stencil pack is made up of:

1. Stencil sheet that has a special coating which ink will not pass through

2. Cushion sheet which is put between the stencil and backing to keep the stencil from tearing when typing

3. Backing sheet that is the heavy sheet which helps hold the stencil pack

4. Film sheet that helps to make the copy bolder and keeps the stencil wax from sticking to the typewriter keys

B. Stencil guide marks on the stencil sheet tell where to type or draw on the stencil

(NOTE: See TM-2)

1. The top edge paper guide is one-half inch above the broken line. This gives the half-inch limits needed in duplication.

2. The typewriter scales show both pica and elite. Use this scale in typing a stencil. Do not use the scale on the typewriter.

3. The numbers located on both sides of the stencil are the vertical line numbers. If typing begins on line one, there will be a one-half inch top margin.

4. The side margins allow for a 5/8-inch margin on each side of the stencil.

5. The postal card area is the small boxed area in the middle of the stencil.

6. There are two warning numbers on the stencil. The first warning numbers are for 11-inch paper. The second warning numbers are for 14-inch paper.

7. The area of reproduction is the area on the inside of the boxed area.

III. Typing a Stencil

A. Put the typewriter ribbon control to the "stencil" position.

B. Unless a film sheet is being used over the stencil, clean typewriter keys with a cleaning brush.

C. Place a cushion sheet between the stencil sheet and the hard backing sheet. Make sure the glossy side of the cushion sheet is facing toward the stencil.

D. Put the stencil pack in the typewriter as if inserting a regular sheet of paper.

E. Set margins and begin typing, using stencil guide marks on stencil sheet.

F. Proofread copy before removing stencil from typewriter.

IV. Correcting the Stencil

(NOTE: See TM-3)

A. Roll master up and remove the film sheet.

B. Using a smooth object (paper clip is okay), rub over the error very gently. This spreads the wax coating over the error.

C. Lift the stencil sheet out from the cushion or backing sheet by inserting a pencil and brush the correction fluid over the error. Hold in this position until dry.

D. Put film sheet back, roll to typing position, and type over the error.

V. Types of Styli Used in Drawing on a Stencil

(NOTE: See TM-4)

A. Wire-loop stylus--Best for ruling or drawing. Keep the thinnest part of the stylus parallel to the line being drawn.

B. Ball-point stylus--Used for detail work. It is used as one would use a pen.

C. Wheel stylus--Comes in several patterns. It is used for drawing solid and broken lines.

D. Roll-point stylus--Is used for writing, signing names, and freehand drawing. Apply firm pressure when using this stylus, which is held almost straight up.

VI. Drawing a Stencil

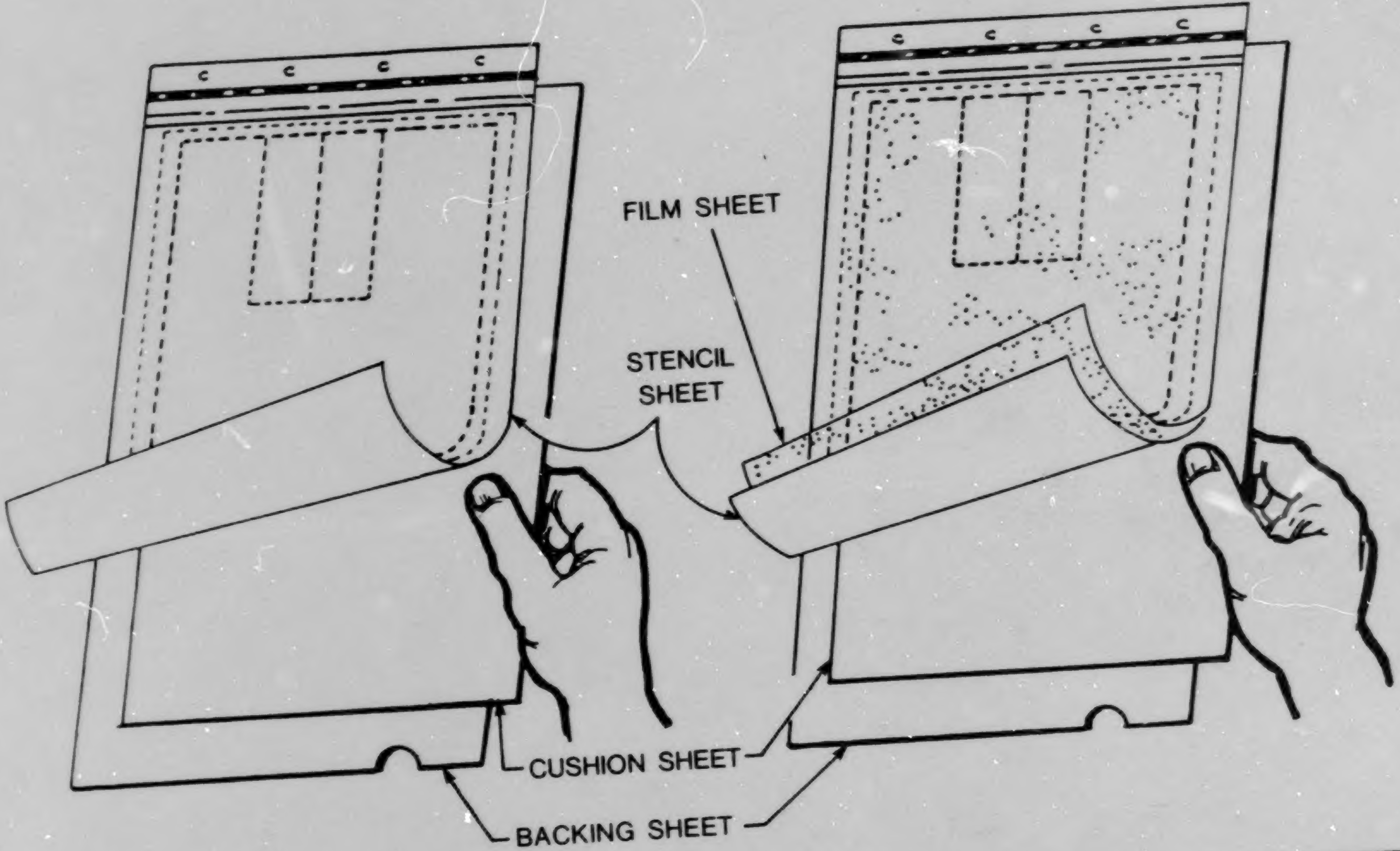
A. Put the picture to be traced between the stencil sheet and the backing sheet.

B. Keep the film sheet in place.

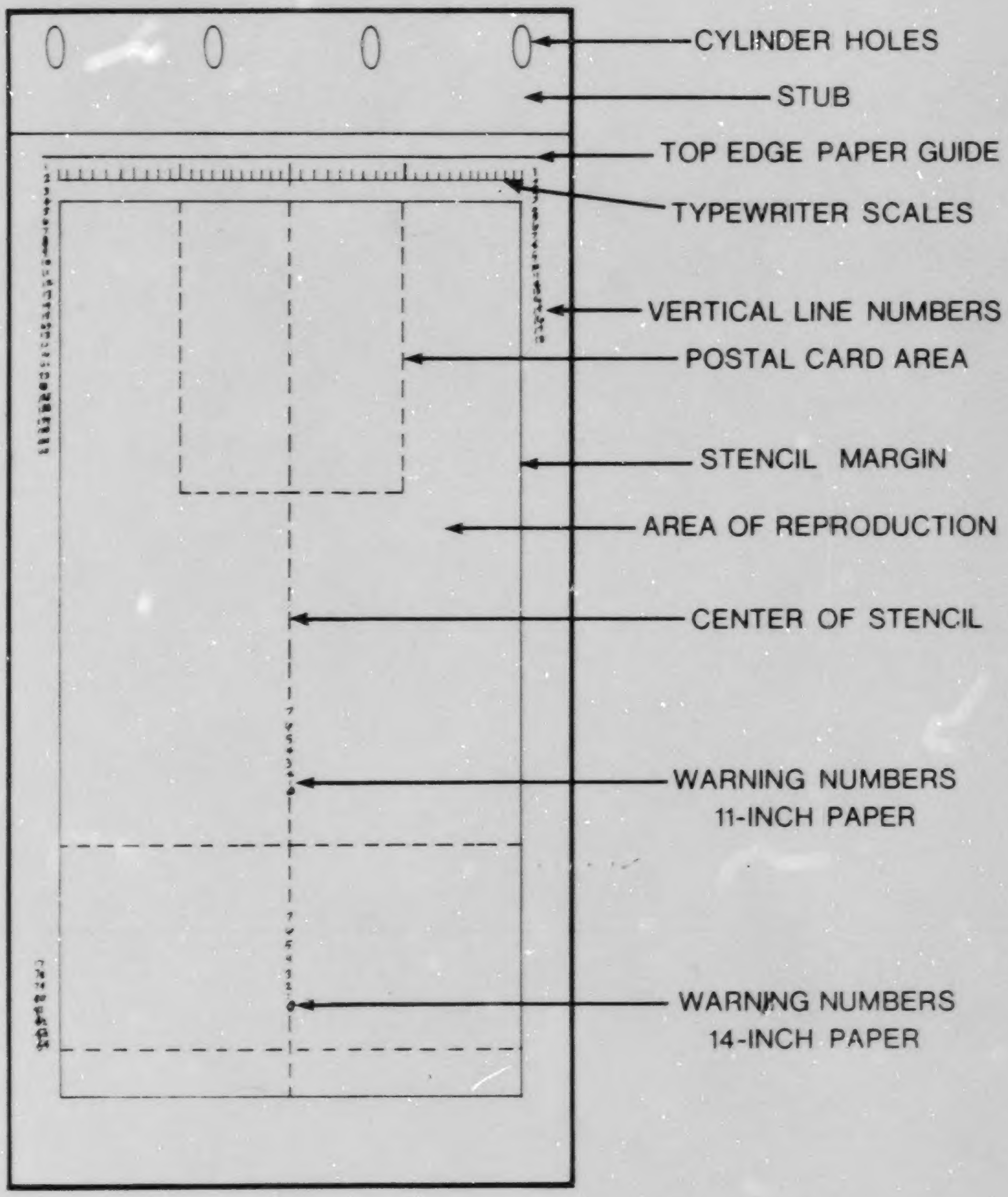
C. Put the entire pack on the lighted table.

D. Draw the picture.

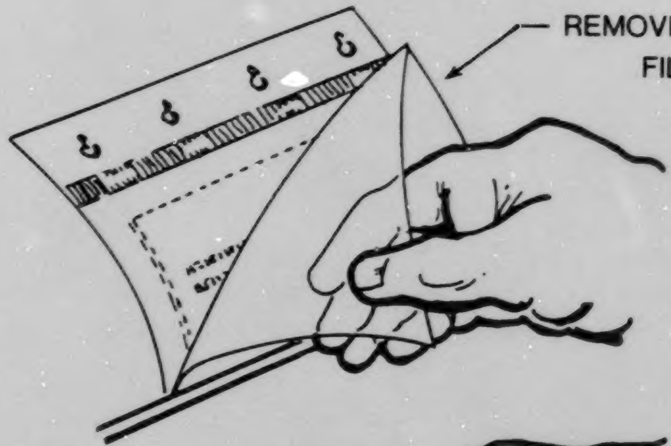
STENCIL PACK



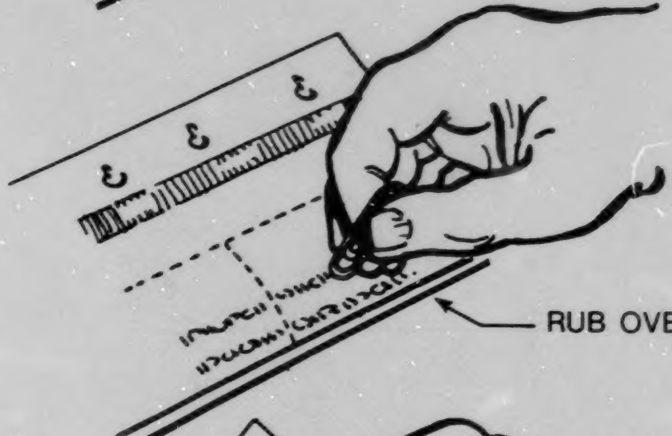
STENCIL GUIDE MARKS



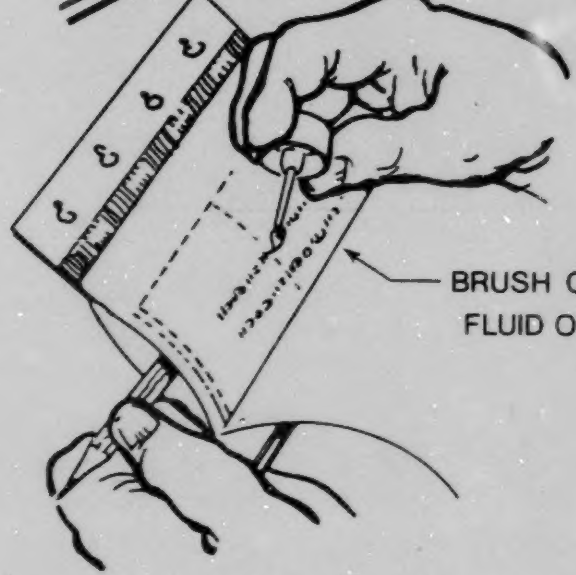
CORRECTING STENCIL



REMOVE TRANSPARENT FILM SHEET



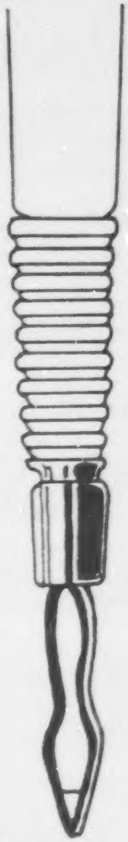
RUB OVER ERROR



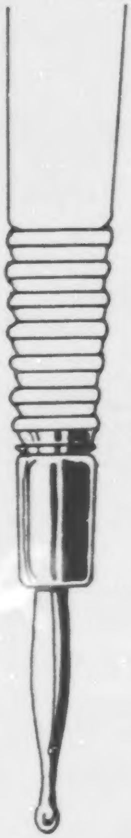
BRUSH CORRECTION FLUID OVER ERROR

TM-3

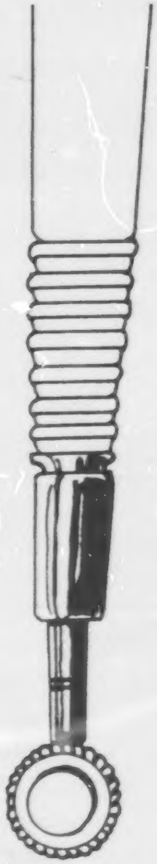
TYPES OF STYLI



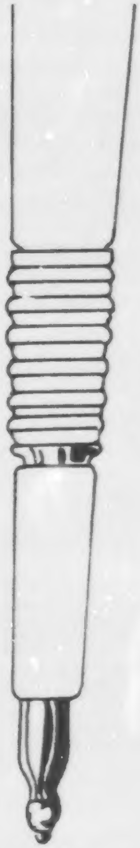
WIRE-LOOP



BALL-POINT



WHEEL



ROLL-POINT

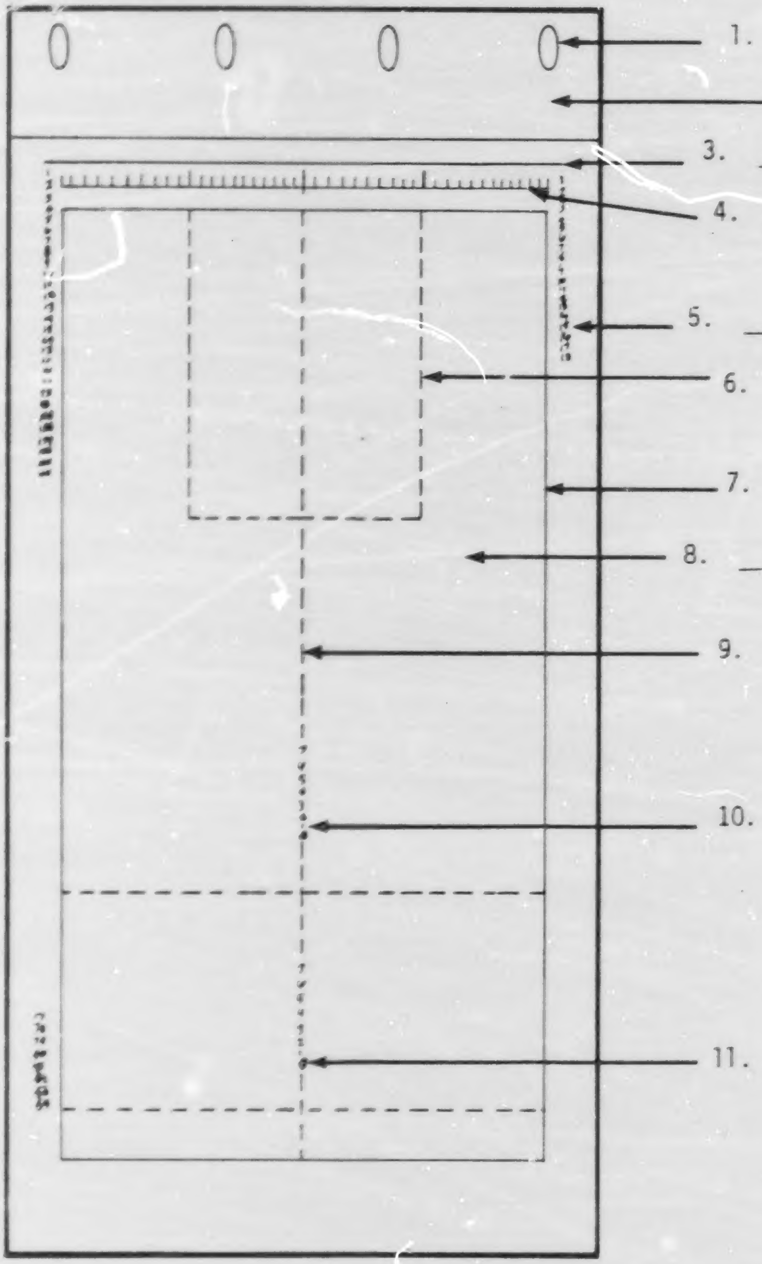
STENCIL DUPLICATION

ACTIVITY SHEET 1--WORD FIND

Directions: Find and circle the stencil duplicating words. If you need help, see the terms and definitions in INFORMATION SHEET 1.

```
A D W I R E L O O P S T Y L U S B D E F
F B G H J M O O T U V Y Y A I O T V L U
T A S T E N C I L S H E E T W N E E F I
T L T W C C I O O T A A C I P N X R M C
T L E A B Y X T Z Y M S S E O I U T A U
Q P C R Q N M S T L D C B A B J K I E S
W O I N U Z C U E U G E X L G M R C E H
H I L I S F I L M S H E E T H A V A V I
E N P N S U S D S V E W C S E R R L V O
E T A G J I P P T O R P P E W G N Q R N
L S C N I T L O V I K W L Q L I M A V S
S T K U R S D N T M W I K Q N N V G V H
T Y S M G L R I O H T N W G Q S T M W E
Y L R B R S N O G E T Q D W E Q O H R E
L U L E K G K X B A C K I N G S H E E T
U S Q R P R I B B O N C O N T R O L T X
S L U L S N O I T I S O P L I C N E T S
Q Q A S R O L L P O I N T S T Y L U S Z
A C P L N R B O P C O L A M R B D M B C
E W P S T E N C I L G U I D E M A R K S
```

Problem 2



1. ____________________

2. ____________________

3. ____________________

4. ____________________

5. ____________________

6. ____________________

7. ____________________

8. ____________________

9. ____________________

10. ____________________

11. ____________________

STENCIL DUPLICATION

ACTIVITY SHEET 3--TYPING STENCILS

Directions: Type the following 3 problems on a stencil.

Supplies needed: Clean typewriter, stencil, correction fluid, and paper clip

Problem 1: Divide a stencil in half. Leave 1 1/2-inch top and side margins.

Dear

Enclosed is your Tarrant's charge card. You will find many Tarrant stores throughout the metroplex and the United States.

At Tarrant's, there is a wide selection of furniture to choose from.

On your first purchase with your new charge card, we will give you a $10 discount. Simply bring this letter with you when you come.

Sincerely yours,

Joe Doe
Customer Services

xx

Enc.

Problem 2: Divide a stencil in half. Center this problem vertically and horizontally.

YOU ARE INVITED

TO THE

GRAND OPENING

OF OUR

NEW TARRANT'S STORE

ON

2nd & Pecan

October 5-7

Donuts and coffee will be served.

Problem 3: Divide a stencil in half. Center this problem vertically and horizontally.

ANNOUNCEMENT

THERE ARE SEVERAL OPENINGS IN OUR NEW TARRANT STORE

SALES CLERKS
OFFICE WORKERS
STOCK CLERKS

IF YOU ARE INTERESTED CONTACT:

June Smith
1919 North Jackson
Campbell, TX 75482
687-3548

STENCIL DUPLICATON

ACTIVITY SHEET 4--USING STYLUS

Directions: Get from your teacher two pictures or diagrams to copy on a stencil. Using one or more styli, copy the pictures. Have a paper clip and stencil correction fluid available to correct any errors. Be sure to sign your name on the stencil.

UNIT V

STENCIL DUPLICATION

INFORMATION SHEET 2--THE ELECTRONIC STENCIL MAKER

I. The Electronic Stencil Maker

   A. A machine which will electronically scan an original and create a stencil

   B. Allows a paste-up master to be used

      (NOTE: Carbon-based pens, pencils, typewriter ribbons, letterings, and cutouts must be used.)

Electronic Stencil Maker Model 1103
Courtesy of Gestetner Corporation

II. Electronic Stencil Maker Operation

   A. Place the original copy on one side of the drum.

   B. Place an electronic stencil on the other side of the drum.

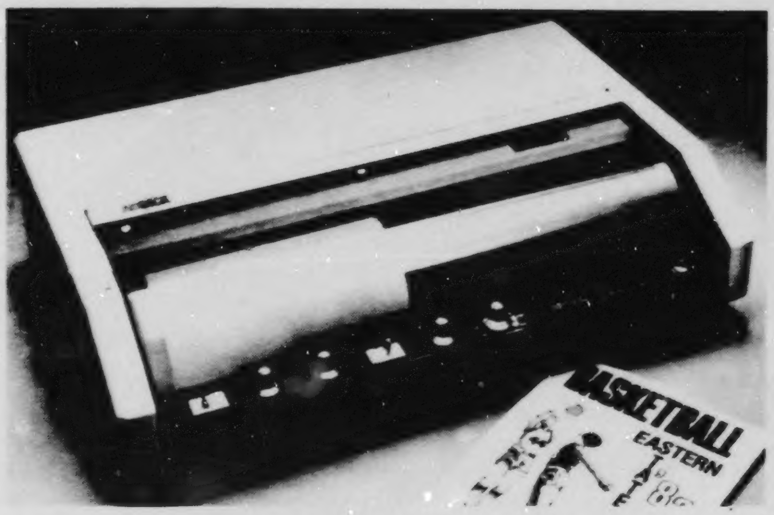
      (NOTE: An electronic stencil is a dark blue or black stencil which cannot be typed or drawn on.)

   C. Place the drum at the start position and press the "ON" button.

      (NOTE: Some stencil makers have, special settings for various special features. Check operators manual for these settings.)

D. Allow 4 to 12 minutes for the machine to make a stencil.

E. Duplicate the stencil in the normal way.



Electronic Stencil Maker Model 592
Courtesy of A. B. Dick

STENCIL DUPLICATION

ACTIVITY SHEET 5--DESIGNING A LAYOUT FOR AN ELECTRONIC STENCIL MAKER

Directions: Design a campaign flyer for yourself. You will need to decide for what office you are planning to campaign.

Use sheet of paper

Letter guide

Typewriter

Paste-up materials from cutouts

Handwritten materials in either artwork or hand lettering

Use an electronic stencil maker to make a stencil for duplication.

NOTE: For further information on layout see the unit entitled, "Copy Preparation for Paste-up Masters." For more practice in using the stencil maker, use the layout masters designed in this unit.

STENCIL DUPLICATION

INFORMATION SHEET 3--OPERATING THE STENCIL DUPLICATOR

I. Machine Parts and Their Functions

(NOTE: See TM-5)

A. Copy counter--shows the number of copies being duplicated

B. Cylinder--holds the stencil in place during duplication (drum-like part of the machine)

C. Feed lever--drops feed rollers to paper as it is fed into the machine

D. Feed roller--draws the paper into the machine

E. Feed roller release lever--releases the feed rollers

F. Feed table--holds the paper to be duplicated

G. Guide rail--holds the paper in place on the feed table

H. Hand crank--feeds the paper to be duplicated into the machine on manual duplicators

I. Hand wheel--feeds the paper manually

J. Motor switch--starts and stops motor-driven machines

K. Receiving tray--holds the duplicated copies

L. Speed control--controls the speed of the material being duplicated on electric duplicators

II. Machine Operation

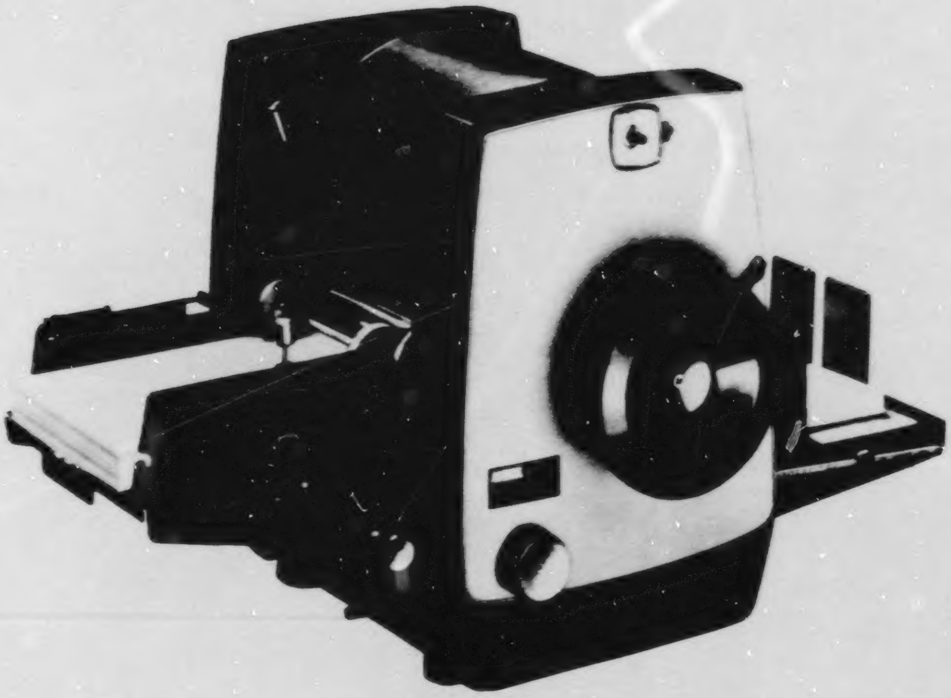
(NOTE: These procedures are general. Follow specific instructions contained in operator's manual.)

A. Getting the machine ready

1. Remove the cylinder cover (if there is a cover).
2. Place and adjust paper on the feed tray.
3. Position the tray which catches the copies.
4. Ink the machine.

B. Putting the stencil on the machine

1. Remove the film sheet and cushion sheet from the stencil pack.
2. Place the stub of the stencil in the notches on the machine (typed side down).



Stencil Duplicator Model 555
Courtesy of A. B. Dick

3. Close the head clamp.
4. Roll the cylinder, and secure the stencil with the bottom clamp.
5. Tear the backing sheet off.

C. Running the copies
1. Turn the machine ON.
2. Run 5 or 6 test copies
    a. To make adjustments by raising or lowering the copy
    b. To distribute the ink
3. Set the counter.
4. Run the copies needed.

D. Finishing the job
1. Turn OFF the paper feed.
2. Turn OFF the motor switch.

3. Take the stencil off
    a. File the stencil, or
    b. Throw the stencil away.
4. Put the cover (if there is a cover) back on the cylinder.
5. Clean work area and store any supplies.

III. Problems with Stencil Duplication

A. Poor copy
    1. Causes--low ink supply or uneven typewriter
    2. Remedies--filling a low ink supply or changing impression control on typewriter to medium setting

B. Multiple sheets
    1. Causes--copy sheet sticking together or feeding parts not working properly
    2. Remedies--fan copy paper, or check feeding mechanism

C. Skip feeding
    1. Cause--feeding mechanism is either dirty or not working properly
    2. Remedies--check, clean, and/or replace feeder parts

D. Back side of copy smudged
    1. Cause--ink is on either the stencil, impression roller, or metal parts of the drum
    2. Remedy--clean the ink off stencil, impression roller, or metal parts of the drum

E. Streaking and spots
    1. Cause--dirty feed rollers or ink leakage from the stencil
    2. Remedies--clean feed wheels and rollers, or apply a light coat of stencil correction fluid over holes in stencil

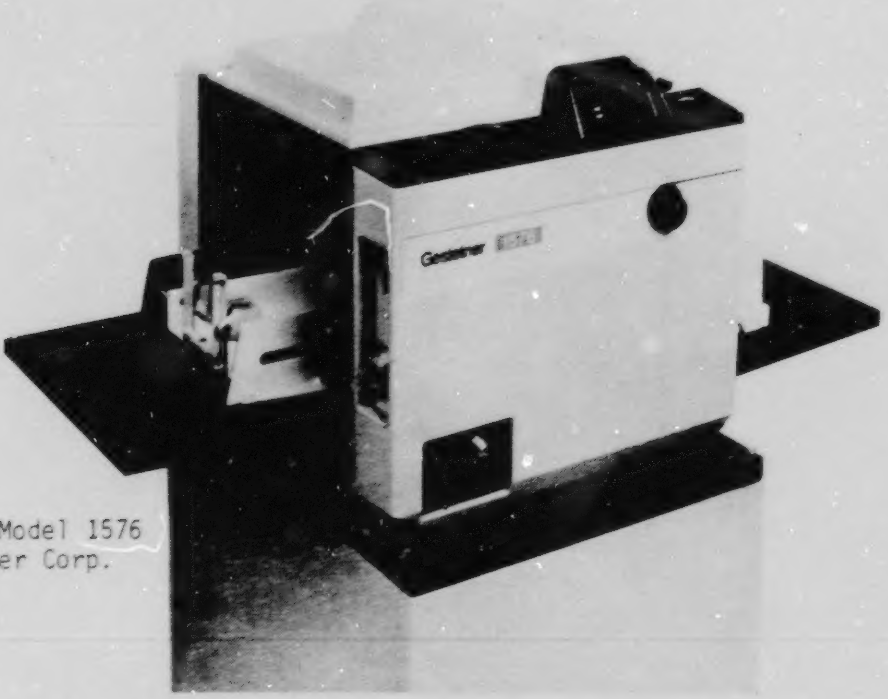
F. Half size letters on copy
    1. Cause--wrinkles on stencil
    2. Remedy--rub thumb across and down the stencil

G. Copy too high or low
    1. Cause--wrong vertical alignment
    2. Remedy--move the vertical placement lever in the direction desired

H. Copy too far left or right of center

1. Cause--wrong stencil centering

2. Remedy--move guide rails on the feed tray to CENTER position



Stencil Duplicator Model 1576
Courtesy of Gestetner Corp.

IV. Advantages and Disadvantages of Stencil Duplication

A. Advantages

1. Equipment costs are low.

2. Copies are of very good quality.

3. Equipment is fairly easy to operate.

4. Stencils can be stored and reused.

5. Copies don't cost very much.

B. Disadvantages

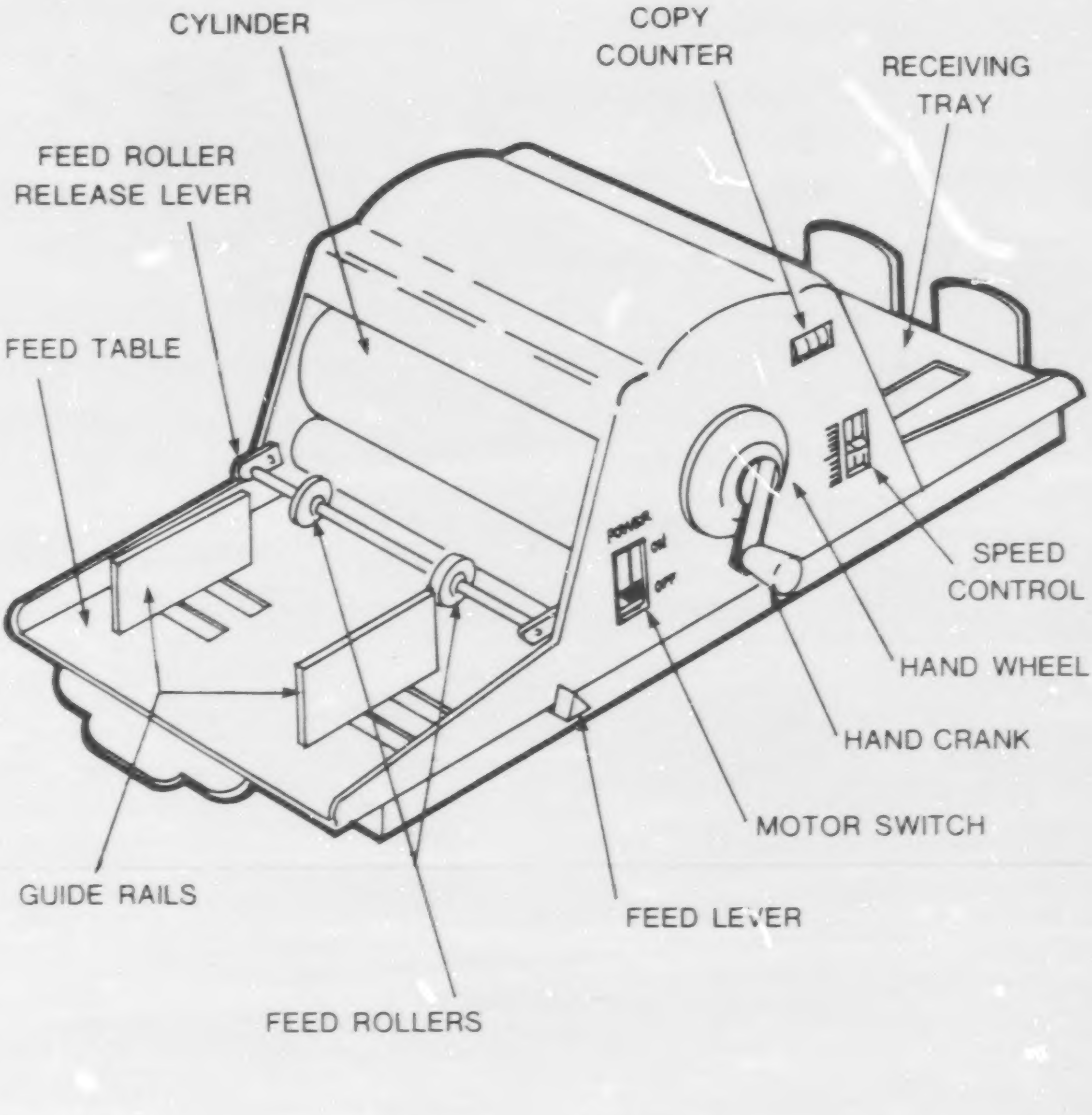
1. The final copy is not as professional as offset duplication.

2. The most copies a stencil can make is up to 3,000.

3. A stencil must be prepared.

4. Stencil duplicator is messy to operate.

THE STENCIL DUPLICATOR



STENCIL DUPLICATION

ACTIVITY SHEET 6--OPERATING THE STENCIL DUPLICATOR

Directions: Run 10 copies of the stencils prepared in ACTIVITY SHEETS 3 and 4.

STENCIL DUPLICATION

UNIT TEST--PART 1

A. Match the correct term related to stencil duplication to the correct definition by placing the letter in the space at the left.

_____ 1. Elite

_____ 2. Margins

_____ 3. Pica

_____ 4. Ribbon control

_____ 5. Stencil sheet

_____ 6. Cushion sheet

_____ 7. Backing sheet

_____ 8. Film sheet

_____ 9. Stencil guide marks

_____ 10. Stencil position

_____ 11. Stylus

_____ 12. Warning numbers

a. a tool used for writing, signing names, and freehand drawing

b. one of the ribbon controls on a typewriter

c. markings on the stencil sheet

d. cardboard-like sheet behind the cushion sheet

e. 12 spaces to an inch on a typewriter

f. 10 spaces to an inch on a typewriter

g. a machine part which controls the printing on a typewriter

h. a wax-coated tissue from which copies are duplicated

i. numbers which tell how many lines are left on a page

j. straight up and down

k. a tool used for detailed art work

l. a tool used for drawing lines

m. a clear sheet put over the stencil sheet

n. a sheet between the stencil sheet and backing sheet which softens the typewriter keys to keep the stencil sheet from tearing

o. the blank spaces around writing or printing on a page

p. a tool used to handwrite or trace designs on a stencil sheet

B. List the parts of a stencil pack

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

C. Put the steps of typing a stencil in their correct order by placing the letters "a" through "f" in the spaces provided.

_____ Place cushion sheet between the stencil and the hard backing sheet.

_____ Proofread the typed stencil.

_____ Set the ribbon control.

_____ Correct any errors.

_____ Remove the stencil from the typewriter.

_____ Place the stencil pack in the typewriter.

D. List the four steps needed to correct an error on a stencil.

1. ____

2. ____

3. ____

4. ____

UNIT V

STENCIL DUPLICATION

UNIT TEST--PART 2

A. Define electronic stencil maker.

B. Place an "X" by the steps involved in using an electronic stencil maker.

_____ 1. Prepare a layout master.

_____ 2. Place the original copy on one side of the drum.

_____ 3. Place an electronic stencil on the other side of the drum.

_____ 4. Place the drum at the start and press the "ON" button.

_____ 5. Peel off the backing sheet.

_____ 6. Allow 4 to 12 minutes for the machine to make a stencil.

STENCIL DUPLICATION

UNIT TEST--PART 3

A. Match the following machine parts with their functions. Place the correct letter in the space at the left.

_____ 1. Copy counter

_____ 2. Cylinder

_____ 3. Feed lever

_____ 4. Feed rollers

_____ 5. Feed roller release lever

_____ 6. Feed table

_____ 7. Guide rail

_____ 8. Hand crank

_____ 9. Hand wheel

_____ 10. Motor switch

_____ 11. Receiving tray

_____ 12. Speed control

a. Shows the number of copies being duplicated

b. Controls the speed of the materials being duplicated on electric duplicator

c. Releases the feed rollers

d. Feeds the paper manually

e. Starts and stops motor-driven machines

f. Holds the duplicated copies

g. Feeds the paper to be duplicated into the machine on manual duplicators

h. Holds the paper to be duplicated

i. Holds the paper in place on the feed table

j. Draws the paper into the machine

k. Drops feed rollers to paper as it is fed into the machine

l. Holds the stencil in place during duplication (drum-like part of the machine)

B. Write the letter of the answer that correctly completes the following statements.

_____ 1. If you produce a poor duplicated copy, you should:

a. put more ink in the machine
b. fan copy paper
c. check or clean feeder parts

_____ 2. If the duplicator is feeding multiple sheets, you should:

a. put more ink in the machine
b. fan copy paper or check feeding mechanism
c. move guide rails on the feed tray

_____ 3. If the duplicator is skip feeding, you should:

a. clean the ink off the stencil
b. check, clean, and/or replace feeder parts
c. rub your thumb across and down on the stencil

_____ 4. If the duplicator is causing streaks, you should:

a. move the vertical placement lever
b. replace feeder parts
c. clean feed wheels and rollers

_____ 5. If the duplicated copy is too high or too low, you should:

a. move the vertical placement lever
b. rub your thumb across and down on the stencil
c. clean feed wheels

C. List the advantages of stencil duplicators

1. Advantages

a. ______________________________

b. ______________________________

c. ______________________________

2. Disadvantages

a. ______________________________

b. ______________________________

c. ______________________________

UNIT VI

PLATEMAKING

UNIT OBJECTIVE

After completing this unit, the student should be able to identify terms dealing with platemaking and have an understanding of the procedures involved in using an electrostatic and transfer platemaker. The student should also be aware of safety rules involved when using the platemaker. This knowledge will be evidenced through demonstration and by successfully completing a unit test.

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student should be able to:

1. Match terms relating to the platemaker with their correct definitions
2. State safety rules for handling plates, platemaker, and the chemicals needed for the plates
3. Identify materials and chemicals needed for platemaking
4. Identify the types of plate ends
5. Identify the types of platemaker systems
6. Identify the parts of an electrostatic platemaker and transfer platemaker
7. State the methods of storing exposed plates
8. Demonstrate the ability to:
    a. Operate the electrostatic and transfer platemaker
    b. Process a paper and metal plate
    c. Apply gum to a developed plate that is to be used later

UNIT VI

PLATEMAKING

NOTES TO THE INSTRUCTOR

I. Preparation of the Unit

   A. Preview the unit. To utilize this unit in the most effective way, you should review each unit of instruction and localize and individualize the material for your program.

   B. On Activity Sheet 4, you will need to have several pasteup masters which need to be made into metal plates.

   C. Prepare a poster which describes how to operate your platemakers.

   D. If you do not have a transfer platemaker or electrostatic platemaker, omit the corresponding section.

   E. Gather the different chemicals and plates you have in your classroom to show students.

   F. Be sure to complete "Offset Safety Procedures" in Introduction to ODP or your own safety procedures before starting this unit.

II. Objective Sheet

   A. Review all objectives and then add or delete to meet your own program needs.

   B. Review and discuss with the students each specific objective as it relates to the program.

III. Information and Activity Sheets

   A. INFORMATION SHEET 1--INTRODUCTION TO PLATEMAKING

      1. Explain the terms and definitions to the students.

      2. Explain the importance of following the safety rules.

      3. Explain and show students the different types of chemicals and materials used in platemaking.

      4. Explain the types of plate ends and show the students the plates used on your equipment.

      5. Explain the types of platemakers and the types of plates made from the platemakers.

      6. Do ACTIVITY SHEETS 1 and 2.

   B. INFORMATION SHEET 2--ELECTROSTATIC PLATEMAKER

      1. Show and explain to the students the parts of your electrostatic platemaker and their functions.

2. Show students how to operate the platemaker.

3. Explain and show students how to process a paper plate by hand and by a master converter if you have one.

4. Do ACTIVITY SHEET 3. Pasteup masters prepared in Unit III may be used.

C. INFORMATION SHEET 3--TRANSFER PLATEMAKER

1. Explain and show the students the parts of your transfer platemaker and their functions.

2. Show the students how to operate the platemaker.

3. Explain and show students how to process a metal plate.

4. Explain and show students how to gum, develop, clean, handle, and store metal plates.

5. Do ACTIVITY SHEET 4. Since metal plates are expensive, you will want to provide the original copies to be made into metal plates.

IV. Transparency Masters

(NOTE: Transparency masters are included in the students' manuals and can be used as Information Sheets.)

A. TM-1--FOUR TYPES OF PLATE ENDS

B. TM-2--ELECTROSTATIC PLATEMAKER

C. TM-3--THE TRANSFER PLATEMAKER

V. Evaluation

A. The Unit Test is divided into three parts.

(NOTE: Each part covers the corresponding Information Sheet.)

B. Parts II and III of the unit test are short. You may want to combine these tests. You probably should test the students on how they operate the platemaker and process the plate for duplication.

C. Various approaches may be used in testing.

(NOTE: Research indicates frequent testing on small units is more effective in developing retention for students.)

1. Give each part of the test after completion of each Information and Activity Sheet.

2. Use the test as an assignment for the student.

3. Some students may respond better to an oral test with the instructor.

4. You should add evaluation questions for any material added to the unit.

VI. Answers to Activity Sheets and Test

A. Answers are based upon information covered in the unit.

B. For convenience in grading, add answer sheets to correspond to questions added to the test.

VII. References

A. Graphic Arts: Process Camera Stripping and Platemaking. Stillwater, OK: Mid-America Vocational Curriculum Consortium, Inc., 1981.

B. Cogoli, John E. Photo Offset Fundamentals. Bloomington, IL: McKnight Publishing Company, 1973.

C. Dennis, Ervin A. Lithographic Technology. Indianapolis: Bobbs-Merrill Educational Publishing, 1980.

D. Platemaker's Operator's Manual

E. Spence, William P. and David G. Vequist. Graphic Reproduction. Peoria, IL: Chas. A. Bennett Co., Inc., 1980.

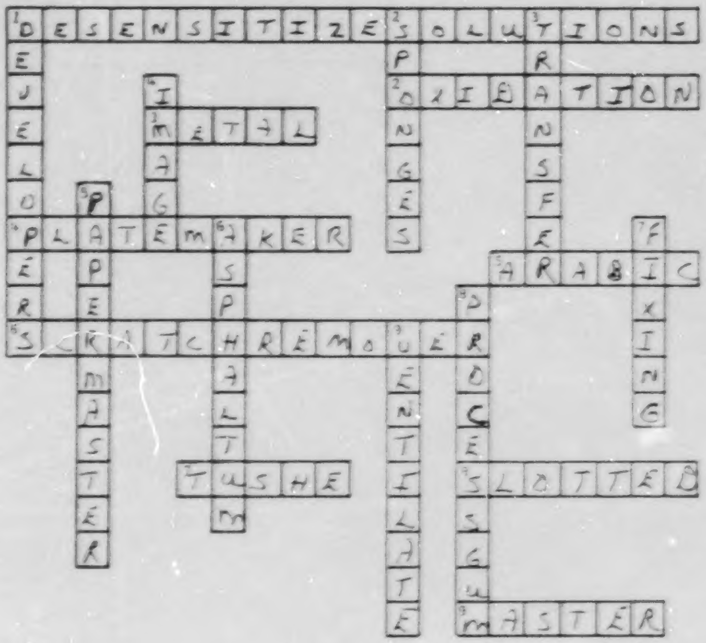
PLATEMAKING

ANSWERS TO ACTIVITY SHEETS

ACTIVITY SHEET 1

1. paper
2. metal
3. paper
4. metal

ACTIVITY SHEET 2



ACTIVITY SHEETS 3 and 4

Evaluated to the satisfaction of the instructor.

UNIT VI

PLATEMAKING

ANSWERS TO UNIT TEST

PART 1

A. 1. f
2. k
3. g
4. j
5. l
6. c
7. i
8. m
9. d
10. e

B. Any four of the following:

1. Shake chemicals well before using.
2. Pour chemicals slowly.
3. Store chemicals in properly marked, tightly closed containers.
4. Do not breathe chemical fumes.
5. Wash hands after handling the chemicals.
6. Do not drink or taste the chemicals.
7. Chemicals to develop plates should be used in a well-ventilated area.
8. Handle sharp-edged plates carefully.
9. Do not handle electrical platemakers with wet hands.
10. Do not look directly at light sources; it could damage eyes.
11. Know what chemical you are using.
12. Add chemicals to water, not water to chemicals.

C. 1. Serrated/loop
2. Straight cut
3. Pinbar
4. Slotted/oval

D. 1. Paper
2. Metal
3. Metal
4. Paper

PART 2

1. T
2. F
3. F
4. F
5. F
6. T
7. F
8. T
9. F
10. T
11. T
12. T
13. T
14. T
15. F

PART 3

1. T
2. F
3. F
4. T
5. T
6. F
7. T
8. T
9. F
10. T

PLATEMAKING

INFORMATION SHEET 1--INTRODUCTION TO PLATEMAKING

I. Terms and Definitions

- A. Asphaltum--a mineral matter used to protect the image area of stored plates
- B. Desensitizing solutions--a mineral matter that removes the light-sensitive coat that has not been exposed
- C. Developers--chemicals that make the exposed area seen
- D. Direct image plates--paper masters onto which typewritten, handwritten or drawn materials are directly placed
- E. Fixing solution--desensitizing solution which does not protect plates from the air
- F. Gum arabic--covering solution used to reduce oxidation of the non-image areas on the plate
- G. Mechanical direct image--paper master onto which the original is copied
- H. Oxidation--the results of exposure to air, causing whiteness and rough surfaces on a plate (mainly with metal plates)
- I. Platemaker--a machine which photographs material onto an offset plate to be used for duplicating
- J. Pre-sensitized metal plate--light-sensitive coated plate that allows images to be picked up by exposure to a bright light
- K. Process gum--desensitizing solution which protects the plate from the air
- L. Tushe--chemical used for adding or correcting image areas on a plate
- M. Ventilated--free flow of air

II. Safety Rules

- A. Handling the chemicals properly
    1. Know what chemical you are using.
    2. Shake chemicals well before using.
    3. Add chemicals to water, not water to chemicals when mixing.
    4. Pour chemicals slowly.
    5. Store chemicals in properly marked, tightly closed containers.

   6. Do not breathe chemical fumes.
   7. Wash hands after handling the chemicals.
   8. Do not drink or taste the chemicals.
   9. Chemicals to develop plates should be used in a well-ventilated area.

B. For handling the plates and platemaker
   1. Handle sharp-edged plates carefully.
   2. Do not handle electrical platemaker with wet hands.
   3. Do not look directly at light sources; it could damage eyes.

III. Materials and Chemicals

A. Materials used in platemaking
   1. Squeegees
   2. Sponges
   3. Developing pads
   4. Cheesecloth polishing strips
   5. Disposable cotton wipes
   6. Rolls or stacks of absorbent paper
   7. Plates

B. Chemicals used in platemaking
   1. Process gum--used to desensitize the non-image part of a plate coating; protects the plate from the air
   2. Fixing solution--used to desensitize the non-image part of a plate coating; does not protect the plate from the air
   3. Gum arabic--used to reduce oxidation of the non-image areas on the plate
   4. Asphaltum--made from petroleum and gum arabic; used to protect the image area of stored plates
   5. Developers--made of developing ink or developing lacquer
   6. Tushe--used for adding or correcting image areas on a plate
   7. Scratch remover, deletion fluid and stop-out solution--used to remove unwanted image and non-image areas on the plate

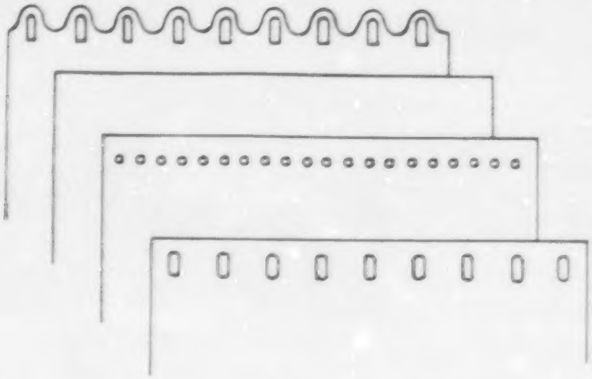
IV. Types of Plate Ends

A. Serrated/loop

B. Straight cut

C. Pinbar

D. Slotted/oval



V. Types of Offset Plates

A. Direct image plates

(NOTE: See Unit VII, "Offset Duplication")

1. Also called paper masters

2. Plates or masters onto which typewritten, handwritten or drawn materials are directly placed

B. Pre-sensitized metal plates

1. The original copy is photographed on a negative and then placed on metal plate.

2. A transfer or exposing platemaker is used to make the plate.

C. Mechanical direct image

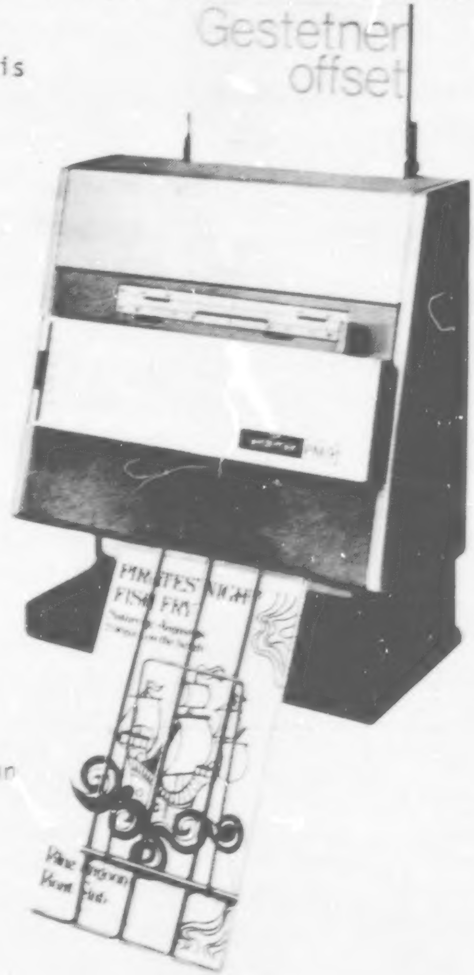
1. The original copy is copied onto a paper master.

2. A photo-direct or electrostatic platemaker is used to make the paper plate.

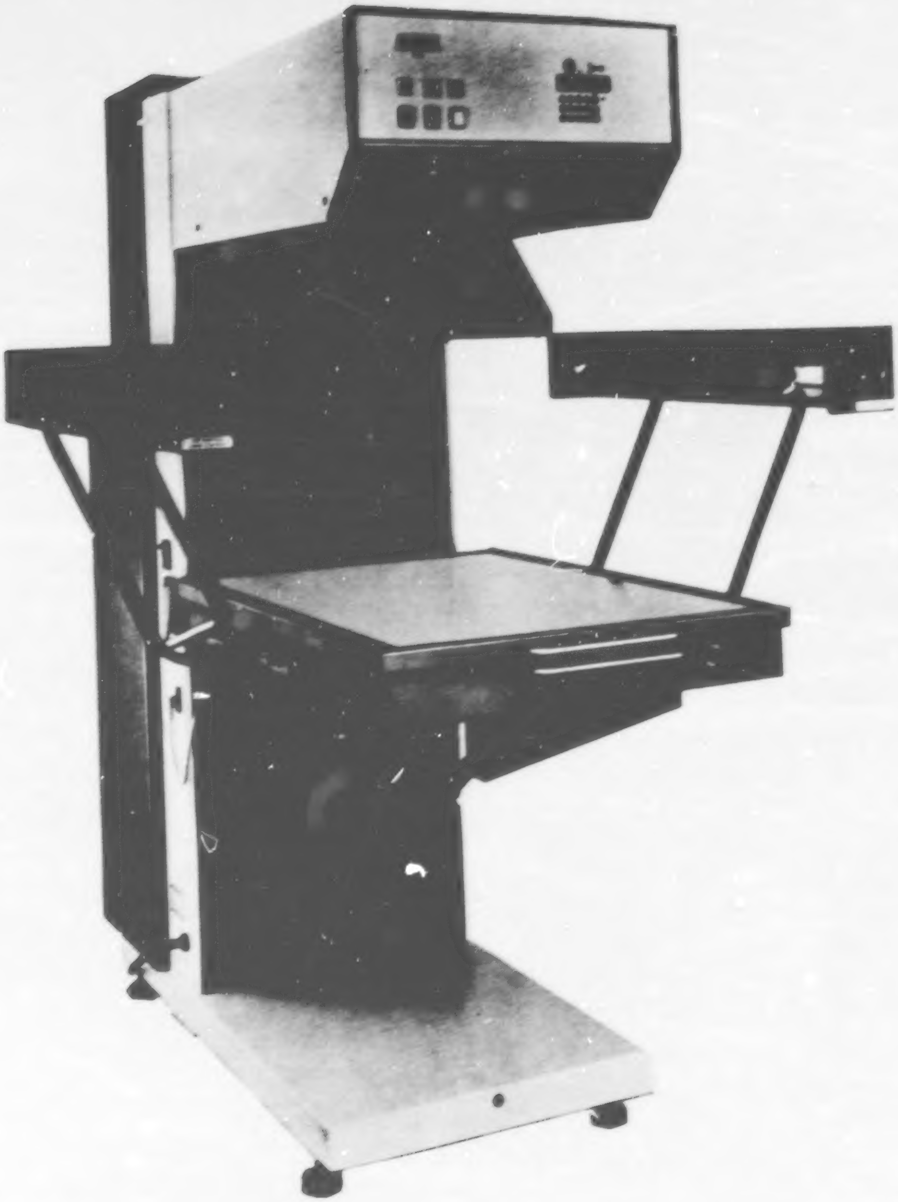
VI. Types of Platemaking Systems

(NOTE: See TM-2)

A. Photo-direct platemaker and electrostatic platemaker are used to develop mechanical direct image.



Platemaker Model PM9
Courtesy of Gestetner Corporation



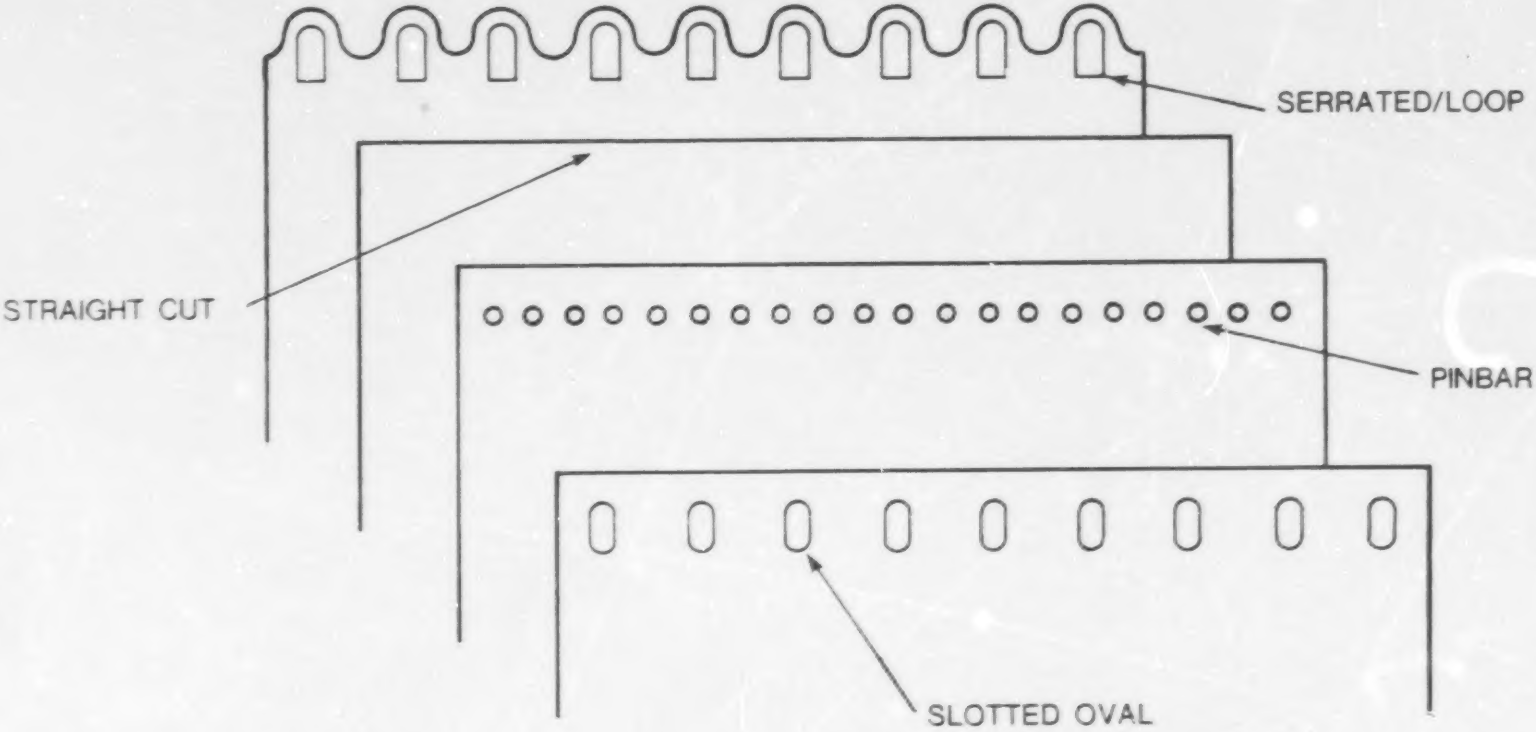
Photomat platemaker Model 145
Courtesy of A. B. Dick

8. Transfer platemaker and exposing platemakers are used to develop metal plates.

Platemaker Model DT9
Courtesy of Gestetner Corporation

NuArc Platemaker
Photography by OCL staff

FOUR TYPES OF PLATE ENDS



TM-1

237

PLATEMAKING

ACTIVITY SHEET 1--MATCHING OFFSET PLATES WITH PLATEMAKERS

Directions: Indicate what type of offset master (metal plate or paper master) is made from the following platemakers.

_____________ 1. Photo-direct platemaker

_____________ 2. Exposing platemaker

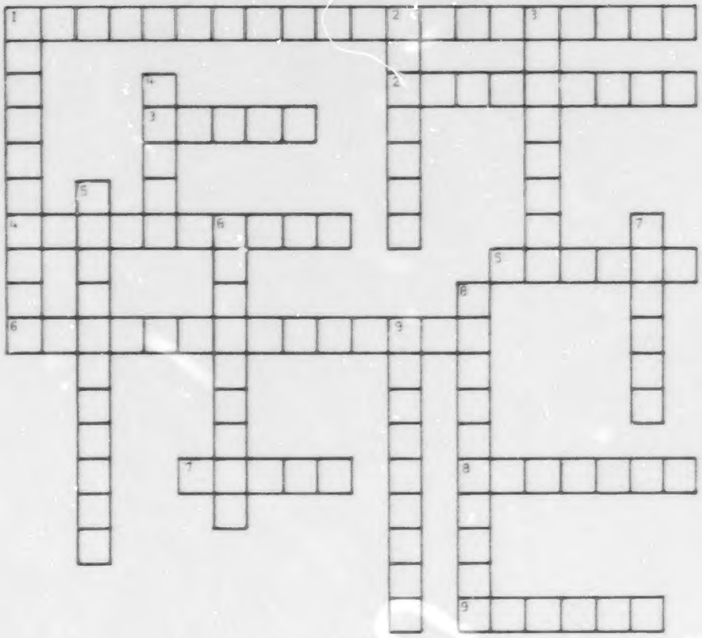
_____________ 3. Electrostatic platemaker

_____________ 4. Transfer platemaker

UNIT VI

PLATEMAKING

ACTIVITY SHEET 2--CROSSWORD PUZZLE



ACROSS

1. Chemical which makes a master less sensitive to light
2. Reaction resulting from exposure to air, causing whiteness and rough surfaces on a plate
3. Type of offset plate
4. Machine which makes plates
5. Covering solution used to reduce oxidation of the non-image areas on the plate is called gum _________
6. Solvent used to remove unwanted image
7. Chemical used for adding or correcting image areas on a plate
8. Type of plate end
9. Plate

DOWN

1. Chemical made of lacquer
2. Material which soaks up liquids
3. Platemaker
4. Likeness to the original
5. Direct image plate
6. Chemical used to protect the image area of stored plates
7. Solution that does not protect the plate from air
8. Solution which protects the plate from the air
9. Free flow of air

UNIT VI

PLATEMAKING

INFORMATION SHEET 2--ELECTROSTATIC PLATEMAKER

I. Parts and Their Functions

   A. Copy glass--the glass where the original copy is placed to be made into a master

   B. Counter--the control which shows the number of copies made

   C. Light/dark control--the knob which controls the lightness or darkness of the copy

   D. Multiple copies--the knob which controls the number of copies

   E. Paper cutter--the switch which shows where the master will be cut

   F. Roll feed paper--the paper which is used in making masters

II. Operating the Electrostatic Platemaker (Paper Plate)

   (NOTE: These procedures are general. Follow the specific instructions contained in operator's manual for your particular model.)

   A. Go to the electrostatic platemaker.

   B. Lift the door which conceals the paper.

   C. Properly load feed roll of master paper into machine.

   D. Raise the lid on top of the machine.

   E. Place the master copy, printed side next to glass, aligning with guides as indicated on the machine.

   F. Place density on correct number (use trial and error method).

   G. Set the paper cutter indicator two inches longer than the master copy.

   H. Place counter on number 1.

   I. Close the lid; turn ON the on/off switch.

   J. Press the print button; your copy should come out in the receiving tray.

III. Processing the Paper Plate

   A. Master converter--a machine which coats the direct image master to prevent the margin and background areas from picking up ink.

      1. Check the tray of the master converter for clean desensitizing solution.

      2. Check the rollers of the master converter to see if they are free of all dry-crusted buildup.

3. If the master converter is clean, pick up the paper master from the receiving tray.
4. Turn on the master converter.
5. Place either end of master in feeder opening of the converter unit.
6. Push master through solution until the rollers catch the bottom edge of the master.
7. As the master comes out of the rollers, curl the bottom edge in your hand--receive the master as it comes out of the rollers.
8. After taking the master out of the converter, hand it to the offset duplicator operator.
9. Turn off converter.
10. Clean up area around master maker and master converter.

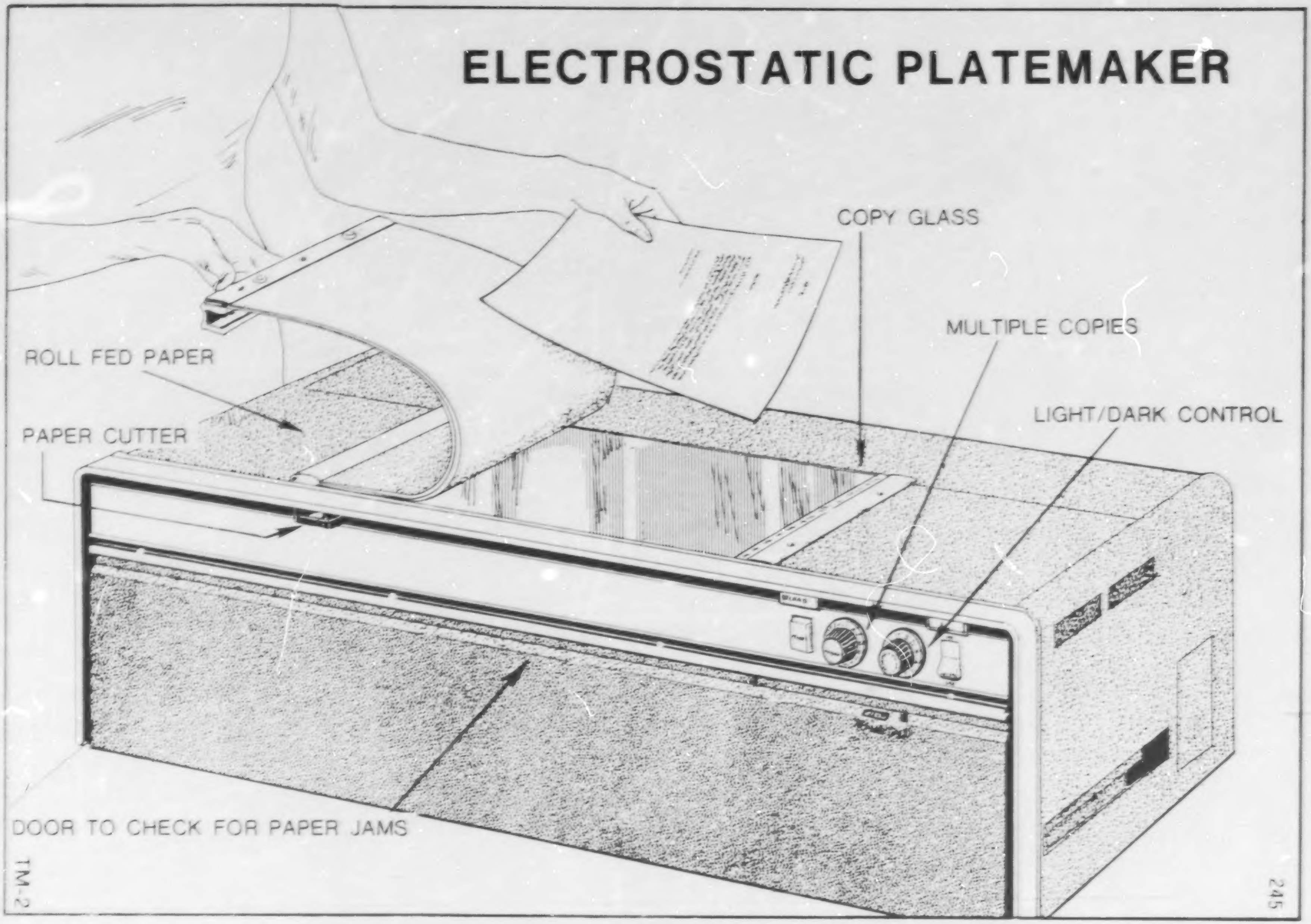
B. By hand

1. Place plate on a glass surface or plastic table top.
2. Pour desensitizing solution onto the plate.
3. With a clean cotton pad, rub solution over the entire surface of plate, wiping paper master with straight strokes.
4. Wipe plate with wet cotton pad before putting it on the offset machine.

(NOTE: Be sure plate is still damp when attaching to the offset. If it has had time to dry, the ink will cover all areas.)

IV. Storing--Paper plates are not stored. If a master needs to be duplicated at another time, a metal plate should be made.

ELECTROSTATIC PLATEMAKER



TM-2

245

PLATEMAKING

ACTIVITY SHEET 3--USING AN ELECTROSTATIC PLATEMAKER

Directions:

1. Using the pasteup masters prepared in Unit III, "Copy Preparation for Pasteup Masters," prepare mechanical direct image masters.
2. Process these masters by using the master converter or by hand.
3. Duplicate these masters on an offset duplicator. For further instructions see Unit VII, "Offset Duplication."

PLATEMAKING

INFORMATION SHEET 3--TRANSFER PLATEMAKER

I. Parts and Their Functions

A. Exposure timer--the dial which sets the number of seconds during which shutter will be open and lights on

B. Impulse switch for automatic exposure--the switch which causes exposure of the negative to the original master

C. Impulse switch for developer section--the switch which starts the developing process of the metal plate from the negative

D. Main switch--turns the machine on and off

II. Operating Transfer Equipment

(NOTE: These procedures are general. Follow specific instructions in operator's manual for particular model.)

A. Set exposure dial control.

B. Place negative, yellow side up, in machine.

C. Place original face down on the negative, making sure original is placed the right way.

D. Close lid and turn on main switch.

E. Press impulse switch for exposure.

F. Remove original and turn negative face side down.

G. Position plate, dull side up, on glass and align under separator.

H. Place negative on top of plate, yellow side down, sliding on top of separator.

I. Press switch for developer section.

J. Wait a set period of time and peel negative from plate.

III. Processing Metal Plate

A. Place plate on glass surface or smooth plastic table top.

B. Spread desensitizing solution over plate with cotton pad.

C. Place developer on image area of the plate using a circular motion.

D. Rub developer over copy area with the same cotton pad, moving from left to right with light to medium strokes until image areas are dark, bright red.

E. Rinse plate with water right away.

F. If wrong images are on plate, remove the images with a cotton pad or cotton swab moistened with deletion fluid.

G. Store plate.

IV. Gumming of Plates--protects the developed plate which will be used later from oxidation, dirt, grease, and finger prints

A. After applying gum arabic to plate, surface should be buffed dry.

B. Both sides of plate should be buffed dry before hanging up for storage.

C. Hang up plates in such a way so that one plate does not lie against another.

D. If plate has been run, clean both sides before gumming.

V. Handling and Storing Plates

A. Handling

1. Pick up plates at ends, using only thumb and index finger.

(CAUTION: Avoid sliding fingers along plate edges as they are sharp.)

2. Avoid touching plate surfaces with fingers before and after processing.

3. Lift large plates by opposite corners to avoid crimping or scratching.

B. Storing

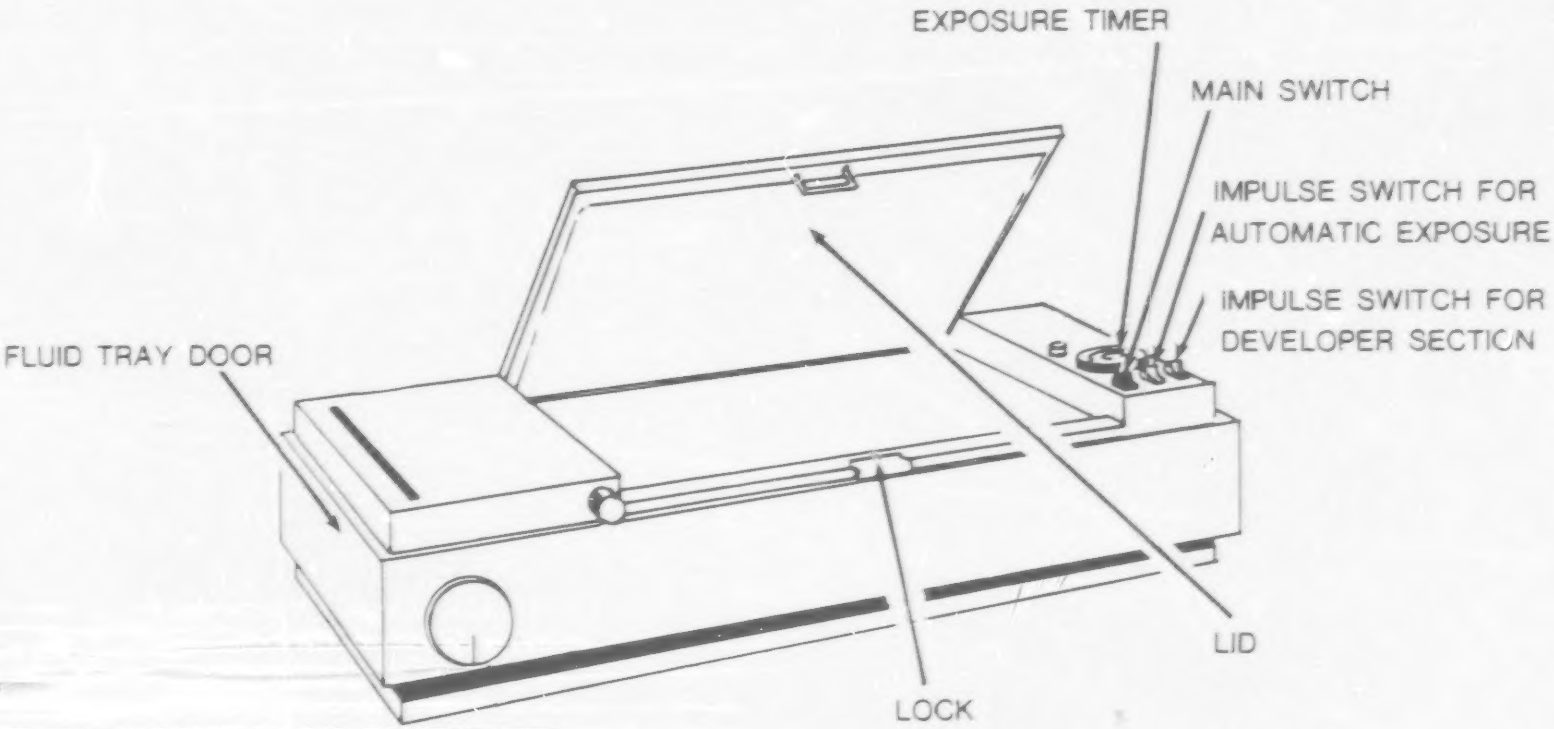
1. Be certain all plates are clean and dry before storing.

2. Plates should be stored if vertical hangifg envelopes if possible.

3. Plates can be stored in flat drawers if protected by folders.

4. Store unexposed, presensitized plates in cool, dry area away from light and do not remove until ready for exposure.

TRANSFER PLATEMAKER


EXPOSURE TIMER
MAIN SWITCH
IMPULSE SWITCH FOR AUTOMATIC EXPOSURE
IMPULSE SWITCH FOR DEVELOPER SECTION
FLUID TRAY DOOR
LID
LOCK

TM-3

251

PLATEMAKING

ACTIVITY SHEET 4--USING A TRANSFER PLATEMAKER

Directions:
1. Get from your teacher a pasteup master which will be duplicated several different times.
2. Make a metal plate.
3. Process the metal plate.
4. Duplicate the metal plate. (See Unit VII, "Offset Duplication," for further instructions.)
5. Gum the plate.
6. Store the plate.

PLATEMAKING

UNIT TEST--PART 1

A. Match the following terms to their definitions by placing the correct letter in the space at the left.

_____ 1. Asphaltum

_____ 2 Desensitizing solutions

_____ 3. Developers

_____ 4. Direct image plates

_____ 5. Fixing solution

_____ 6. Mechanical direct image

_____ 7. Oxidation

_____ 8. Platemaker

_____ 9. Process gum

_____ 10. Tushe

a. A free flow of air

b. A solution used to reduce oxidation of the non-image areas on the plate

c. A paper master onto which the original is copied

d. A desensitizing solution which protects plates from air

e. A chemical used for adding or correcting image areas

f. A mineral matter used to protect the image area of stored plates

g. A chemical which makes the exposed area seen

h. A light-sensitive, coated plate that allows images to be picked up by exposure to a bright light

i. The results of exposure to air, causing whiteness and rough surfaces on a plate

j. A paper master onto which typewritten, handwritten or drawn materials are directly placed

k. A mineral matter which removes the light-sensitive coat that has not been exposed

l. A desensitizing solution which does not protect plates from the air

m. A machine which photographs materials onto an offset plate to be used for duplicating

B. List four safety rules to observe in platemaking.

1. ______________________________

2. ______________________________

3. ______________________________

4. ______________________________

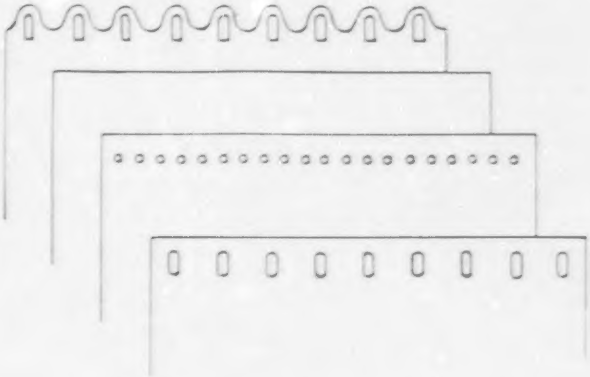
C. Identify the following plate ends.

1. ____________

2. ____________

3. ____________

4. ____________



D. Fill in the blanks to complete the following statements.

1. A photo-direct platemaker develops ____________ plates.

2. A transfer platemaker develops ____________ plates.

3. An exposing platemaker develops ____________ plates.

4. An electrostatic platemaker develops ____________ plates.

PLATEMAKING

UNIT TEST--PART 2

Answer the following statements True or False by placing a T for True or an F for False in the space at the left.

_____ 1. The counter shows the number of copies made.

_____ 2. On an electrostatic platemaker, the paper cutter cuts the original master.

_____ 3. On an electrostatic platemaker, it is impossible to make multiple copies.

_____ 4. On an electrostatic platemaker, the mechanical direct image paper is a lightweight paper.

_____ 5. On an electrostatic platemaker, set the paper cutter two inches shorter than the master.

_____ 6. On an electrostatic platemaker, place the master copy printed side next to glass.

_____ 7. The platemaker is a machine which coats the direct image master to prevent the margin and background areas from picking up ink.

_____ 8. Paper plates are not stored.

_____ 9. In processing the paper plate for duplication, use the chemical gum arabic.

_____ 10. In processing the paper plate, rub the solution over the entire surface of the plate.

_____ 11. If the paper plate has had time to dry, the ink will cover all areas.

_____ 12. A paper plate can be processed by hand or by a master converter.

_____ 13. An electrostatic platemaker makes paper plates.

_____ 14. After a master has been processed, it is ready to be duplicated.

_____ 15. The copy glass is the glass where the paper master is placed.

PLATEMAKING

UNIT TEST--PART 3

Answer the following statements True or False by placing a T for True or an F for False in the space at the left.

_____ 1. The exposure timer is the dial which sets the number of seconds during which the shutter will be open and the lights on.

_____ 2. The impulse switch for automatic exposure is the switch which develops the metal plate from the negative.

_____ 3. The transfer platemaker makes both paper and metal plates.

_____ 4. To make a metal plate, a negative is needed.

_____ 5. Gumming a plate protects the developed plates which will be used later from oxidation, dirt, grease and finger prints.

_____ 6. After applying gum arabic to plate, hang it up to dry.

_____ 7. In handling a plate, use only the thumb and index finger.

_____ 8. Be certain all plates are clean and dry before storing.

_____ 9. Store unexposed presensitized plates in hot, damp area away from light and do not remove until ready for exposure.

_____ 10. In processing a metal plate, a developer is used.

OFFSET DUPLICATION

UNIT OBJECTIVE

After completing this unit of instruction, the student should be able to define terms related to the offset process, identify the offset systems, list advantages and disadvantages of using the offset, and demonstrate the ability to prepare and process the offset paper master and operate the offset duplicator. This knowledge will be evidenced through demonstration and by successfully completing a unit test.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to:

1. Define terms associated with the offset process
2. Select procedures describing the offset process
3. Identify the offset press systems
4. List advantages and disadvantages of the offset
5. Demonstrate the ability to:
    a. Prepare the offset master
    b. Ink the offset duplicator
    c. Operate the offset duplicator
    d. Clean up the offset duplicator

UNIT VII

OFFSET DUPLICATION

NOTES TO THE INSTRUCTOR

I. Preparation for the Unit

A. Preview the unit. To utilize this curriculum in the most effective way, you should review each unit of instruction and localize and individualize the material for your program.

B. Design a bulletin board on duplication.

C. Prepare materials for duplication--students will take more pride in their work if you will give them material that will be used to duplicate.

1. Materials you will be using

2. Materials other teachers will be using

D. Prepare a poster which describes how to operate the offset duplicator and hang it on the wall by the offset duplicator.

E. Be sure to complete "Offset Safety Procedures" in Introduction to ODP or your own Safety Procedures before starting this unit.

II. Objectives Sheet

A. Review all objectives and then add or delete to meet your own program needs.

B. Review and discuss with the students each specific objective as it relates to the program.

III. Information and Activity Sheets

A. INFORMATION SHEET 1--PREPARING AN OFFSET PAPER MASTER

1. Explain the terms and definitions to the students.

2. Give the students an offset paper master and explain the offset guide markings.

3. Explain how to type and correct errors on the offset paper master (Do ACTIVITY SHEETS 1 and 2).

4. Explain the type of materials used for writing on an offset paper master (Do ACTIVITY SHEET 3).

B. INFORMATION SHEET 2--OPERATING THE OFFSET

1. Show students the offset duplicator parts and explain their functions.

2. Explain how to operate your offset duplicator. Use the poster which you have prepared. (Do ACTIVITY SHEET 4.)

3. Explain the advantages and disadvantages of offset duplication.

IV. Transparency Masters

(NOTE: Transparency masters are included in the student's manual and can be used as Information Sheets.)

A. TM-1--DIRECT IMAGE PAPER MASTER

B. TM-2--THE OFFSET SYSTEM

C. TM-3--THE REVERSE IMAGE PROCESS

D. TM-4--A. B. DICK 360 OFFSET DUPLICATOR PARTS

E. TM-5--A. B. DICK 310 OFFSET DUPLICATOR PARTS

F. TM-6--GESTETNER OFFSET DUPLICATOR PARTS

V. Evaluation

A. The Unit Test is divided into two parts.

(NOTE: Each part covers one Information Sheet).

B. Various approaches may be used in testing.

(NOTE: Research indicates frequent testing on small units is more effective in developing retention for students.

1. Give each part of the test after completion of each Information and Activity Sheet.

2. Use the test as an assignment for the student.

3. Some students may respond better to an oral test with the instructor.

4. You should add evaluation questions for any material added to the unit.

5. You may want to test the students as to how they operate the offset duplicator.

VI. Answers to the Activity Sheets and Test

A. Answers are based upon information covered in the unit.

B. For convenience in grading, add answer sheets to correspond to questions added to the test.

VII. References

A. Bauer, Dennis E. and John W. Strahl. Office Reproduction Processes. San Francisco: Canfield Press, 1975.

B. Graphic Arts: The Press and Related Processes. Stillwater, Okla. Mid-America Vocational Curriculum Consortium, Inc., 1982.

C. Kupsh, Joyce. Duplicating: Machine Operation and Decision Making. Encino, Cal.: Glencoe Publishing Co., Inc., 1972.

D. Offset Duplicator Operator's Manual

E. Pasewark, William R. Reprographics. Cincinnati: Southwestern Publishing Co., 1984.

F. Stewart, Jeffrey R. and Judith A. Scharle. Office Reprographics. New York: McGraw-Hill Book Company, 1979.

UNIT VII

OFFSET DUPLICATION

ANSWERS TO ACTIVITY SHEETS

ACTIVITY SHEETS 1, 2, 3, and 4

Evaluated to the satisfaction of the instructor.

UNIT VII

OFFSET DUPLICATION

ANSWERS TO UNIT TEST

PART 1

A. 1. b
2. d
3. e
4. f
5. i
6. h
7. a
8. c
9. g

B. To correct an offset paper master, lightly erase the mistake with an offset eraser. It is not necessary to erase the whole image, only the greasy deposit. Type the correction over the erasure. Do not make more than one erasure in any spot.

C. Four of the following:

1. ball point pen
2. offset pencil or pen
3. offset crayon
4. rubber stamp
5. carbon paper

PART 2

A. 1. b
2. a
3. c
4. c
5. a
6. c
7. a
8. b
9. b
10. c

B. 1. T
2. T
3. F
4. T
5. F
6. F
7. T
8. T
9. F
10. T

UNIT VII

OFFSET DUPLICATION

ANSWERS TO UNIT TEST

PART 1

A.
1. b
2. d
3. e
4. f
5. i
6. h
7. a
8. c
9. g

B. To correct an offset paper master, lightly erase the mistake with an offset eraser. It is not necessary to erase the whole image, only the greasy deposit. Type the correction over the erasure. Do not make more than one erasure in any spot.

C. Four of the following:

1. ball point pen
2. offset pencil or pen
3. offset crayon
4. rubber stamp
5. carbon paper

PART 2

A.
1. b
2. a
3. c
4. c
5. a
6. c
7. a
8. b
9. b
10. c

B.
1. T
2. T
3. F
4. T
5. F
6. F
7. T
8. T
9. F
10. T

UNIT VII

OFFSET DUPLICATION

INFORMATION SHEET 1--PREPARING AN OFFSET PAPER MASTER

I. Terms and Definitions

A. Elite--12 spaces to an inch on a typewriter

B. Ghost image--the remains of a mistake which has been erased

C. Grease based substance--an oil matter. In offset duplication, the offset will print the grease deposits on the offset plates.

D. Offset duplicator--machine which transfers the image from an offset master to paper

E. Offset master (plate)--thin sheet of paper, plastic, or metal which has a printing image

F. Offset paper master guide marks--markings on the offset paper master

G. Page boundaries--the limits on a paper master that should not be passed for duplicating certain sizes of paper

H. Pica--10 spaces to an inch on a typewriter

I. Warning numbers--numbers which tell how many lines are left on a page

II. Offset Paper Master

A. The offset paper master is also called:

(NOTE: See TM-1)

1. A direct image plate

2. Duplimat

B. The offset paper master guide marks

1. From the top edge paper guide, leave at least 1/2-inch for duplication.

2. The typewriter scales show both pica and elite. Use this scale--not the typewriter scale--when typing.

3. The numbers located on both sides of the paper master are the vertical line numbers.

4. Type within the page boundaries.

5. There are two warning numbers on the offset paper master. The first warning numbers are for 11-inch paper. The second warning numbers are for 14-inch paper.

III. Typing an Offset Paper Master

A. Clean typewriter keys.

B. Use a typewriter ribbon of carbon plastic, carbon paper, or a special grease fabric.

C. Move the paper bail rollers outside the lined left and right boundary markings on the master to prevent the rollers from smearing the type.

D. Put offset master in typewriter.

(NOTE: The side on which guide markings are printed is the side on which typing should be done).

E. Set the pressure control to the lowest position.

F. Set margins and begin typing, using offset paper master guide marks.

G. Proofread typed material before removing it from typewriter.

IV. Correcting an Offset Paper Master

A. Use a special offset eraser or a soft red rubber eraser.

B. Erase lightly.

1. Deep erasures remove the coating on the master.

2. It is not necessary to remove the "ghost" image, only the greasy deposit.

a. To be erased.

there

b. Erasure with ghost image remaining but dark type removed. This is a satisfactory erasure.

c. Correct letter typed with ghost image still remaining. The incorrect word will not print.

their

4. Print on copy paper.

their

C. Clean the eraser after each stroke to prevent any grease smudges. Grease smudges will reproduce.

D. Type the correction over the erasure.

E. Do not make more than one erasure in any spot.

V. Types of Tools to Use in Drawing on an Offset Paper Master

(NOTE: Tools used must contain a grease-based substance).

A. Ball point pen

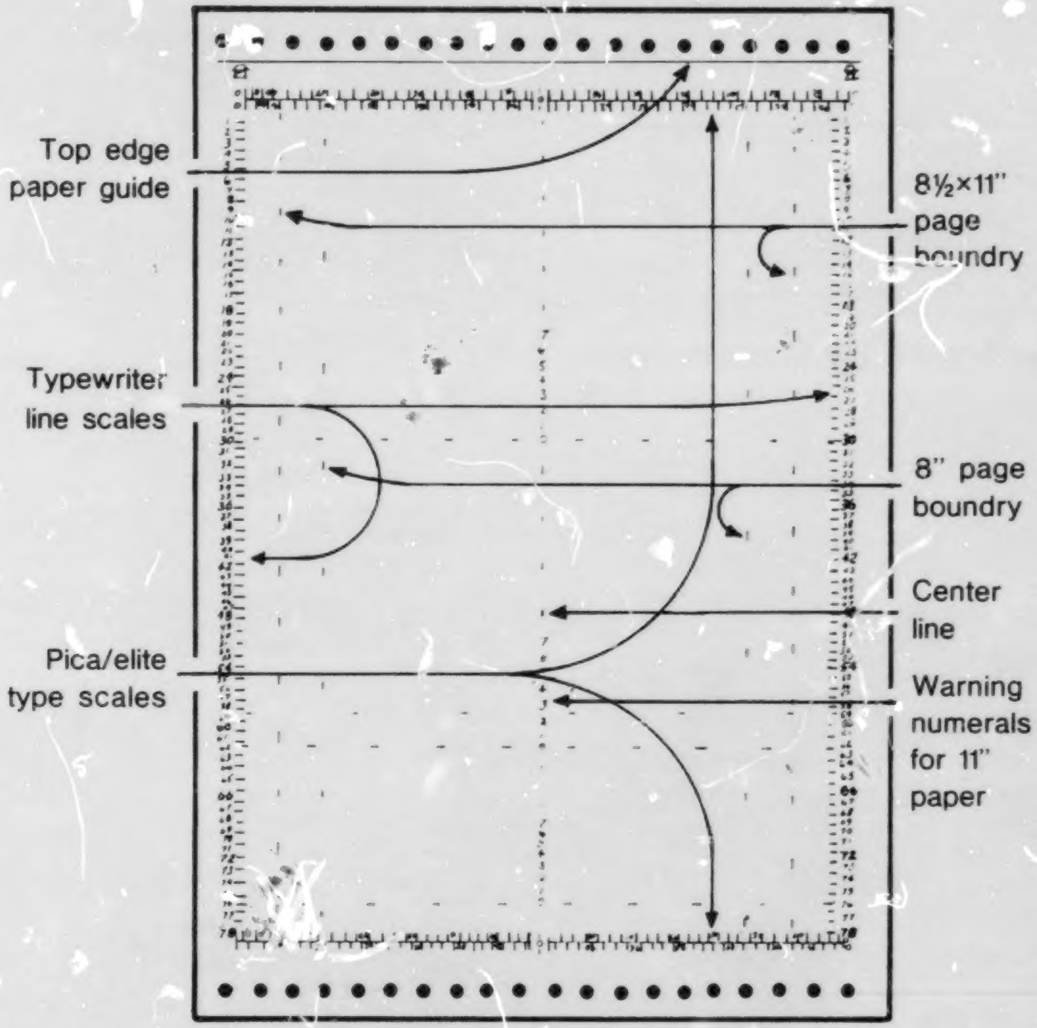
B. Offset pencil or pen

C. Offset crayon

D. Rubber stamp

E. Carbon paper

DIRECT IMAGE PAPER MASTER



UNIT VII

OFFSET DUPLICATION

ACTIVITY SHEET 1--CORRECTING TYPED AND HANDWRITTEN MATERIALS

Directions: Step 1--Put the offset paper master on a lighted table with masking tape at the top of the master.

Step 2--Place a guide sheet under the master. (The top of the guide sheet should be even with the top edge paper guide.)

Step 3--Divide the paper master into four equal parts.

Step 4--In the top left side, type your name.

Step 5--In the top right side, handwrite your name.

Step 6--In the bottom left, type "reson." Erase the mistake and type "reason."

Step 7--In the bottom right, handwrite "reson." Erase the mistake and write "reason."

Step 8--Remove the master.

OFFSET DUPLICATION

ACTIVITY SHEET 2--TYPING AN OFFSET PAPER MASTER

Directions: Type the following three problems on an offset paper master.

Problem 1--Typing a Basketball Schedule--divide an offset paper master in half. Center the following schedule horizontally and vertically.

WASHINGTON HIGH SCHOOL

BASKETBALL SCHEDULE

Date		Opponent	Site
Dec.	2	Campbell	H
	4, 5, 6	Memorial Tournament	T
	9	Travis	T
	11	Crocket	T
	16	Skyline	T
	18	Ridgeway	H
Jan.	4	Jefferson	H
	6	Detroit	H
	8, 9, 10	Tournament	H
	14	Weaterton	T

Problem 2--Typing a memo--divide an offset master in half. Type the following memo. Leave one-inch top and side margins.

TO: All sophomore class members

FROM: Walter Owens, President

DATE: November 2, 19xx

RE: Meeting November 12, 19xx

We need you on November 12. There will be a class meeting on November 12 at 7:45 a.m. in the study hall. We will be discussing possible fund-raising projects. We need to start raising money for the junior-senior prom.

PLEASE BE THERE!

xx

Problem 3--Typing a get-acquainted activity. On a paper master, type the following problem. Leave one-inch top and side margins.

GET-ACQUAINTED ACTIVITY

This activity is designed for you to get to know different people. Find a person who meets the following requirement and have him/her sign his/her name in the blank provided.

___________________ 1. Someone who used "SURE" deodorant this morning

___________________ 2. A person who has an "outie"

___________________ 3. Someone whose birthday is in July

___________________ 4. Someone who ate a Big Mac today

___________________ 5. A person who used scope this morning

___________________ 6. Someone who is wearing "Fruit of the Looms"

___________________ 7. Someone who is wearing shoe strings

___________________ 8. Someone who is wearing a barrette

___________________ 9. Someone with double pierced ears

___________________ 10. Someone to sing Jingles Bells to

___________________ 11. Someone with his/her name on his/her belt or shirt

___________________ 12. Someone who is wearing green socks

___________________ 13. Someone who is wearing pink underwear

___________________ 14. Someone who is wearing a plaid shirt

___________________ 15. Someone who can say the VOCCT pledge

UNIT VII

OFFSET DUPLICATION

ACTIVITY SHEET 3--DRAWING OR WRITING ON AN OFFSET MASTER

Directions: Design an open house invitation to students who might be interested in joining this class next year. Put the invitation on the offset paper master.

Use each of the following tools:

Typewriter

Ball point pen

Rubber stamp

Carbon paper

Offset pen or pencil

UNIT VII

OFFSET DUPLICATION

INFORMATION SHEET-2--OPERATING THE OFFSET DUPLICATOR

I. Machine Parts

(NOTE: See TM-2)

A. Aquamatic control--regulates the amount of water flowing during the operation of the machine

B. Blanket cylinder--a drum on the offset duplicator used to hold a rubber blanket which comes into contact with the inked image on the plate cylinder

C. Counter--shows the number of copies duplicated

D. Feed lever--drops feed rollers to paper as it is fed into the machine

E. Feed roll pressure adjustment--increases or decreases the pressure of the feed rollers on the paper

F. Feed table--holds the paper to be duplicated

G. Feed table raising knob--raises feed table to the needed level

H. Feed table release--releases the feed table

I. Impression cylinder--carries the paper inside the offset duplicator

J. Impression control--increases or decreases the pressure on the paper as it passes between the impression and blanket cylinder

K. Ink fountain control lever--regulates the amount of ink flowing during the operation of the machine

L. Ink fountain roller knob--allows increased or decreased ink flow in the machine

M. Motor switch--turns the machine on or off

N. Operation control lever--controls the printing of the copy

O. Plate (master) cylinder--holds the offset plate in place and brings the plate into contact with the dampening rollers

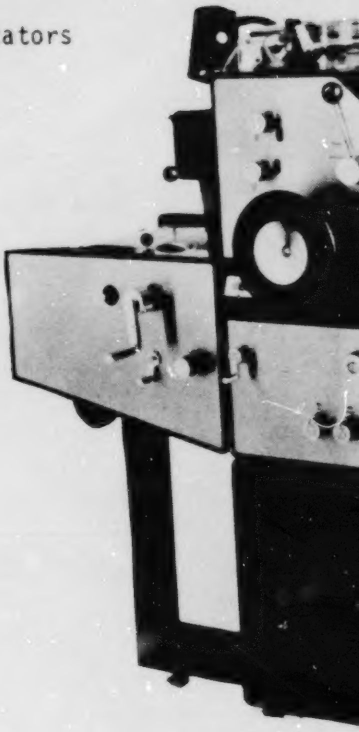
P. Receiving tray--holds the duplicated copies

Q. Speed control--regulates the speed of the machine

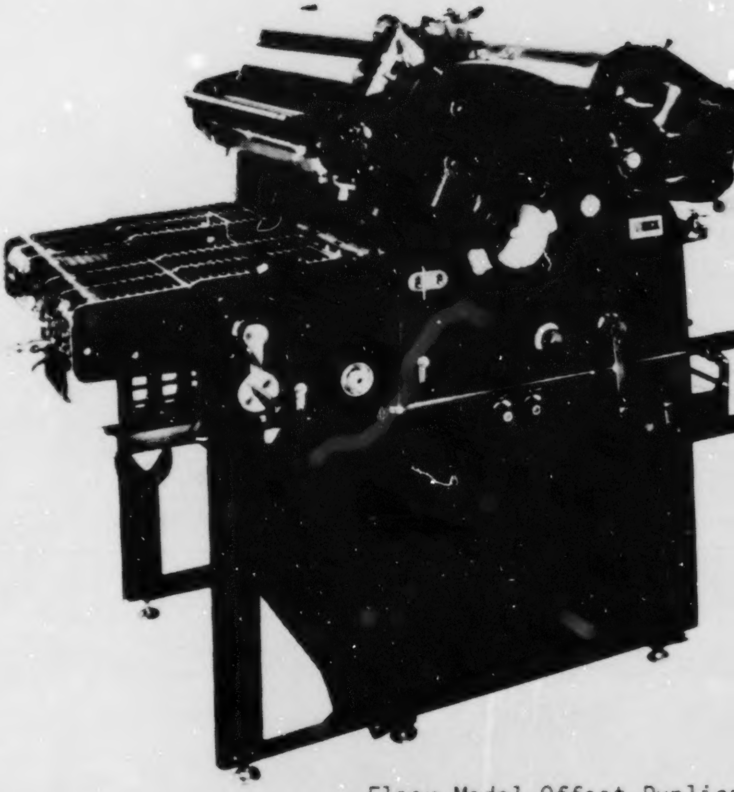
R. Vertical copy adjustment lock--positions vertical placement of copy on page

II. Types of Offset Duplicators

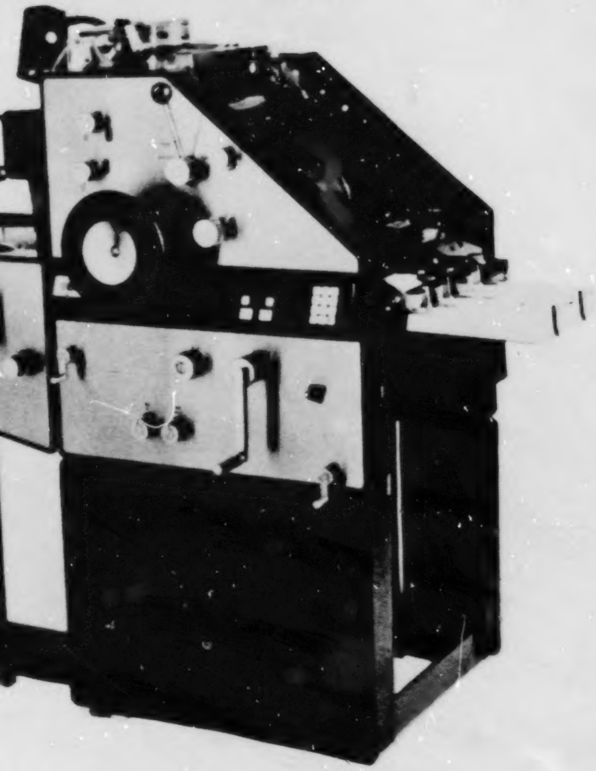
A. Floor model



Floor Moc
Courtesy

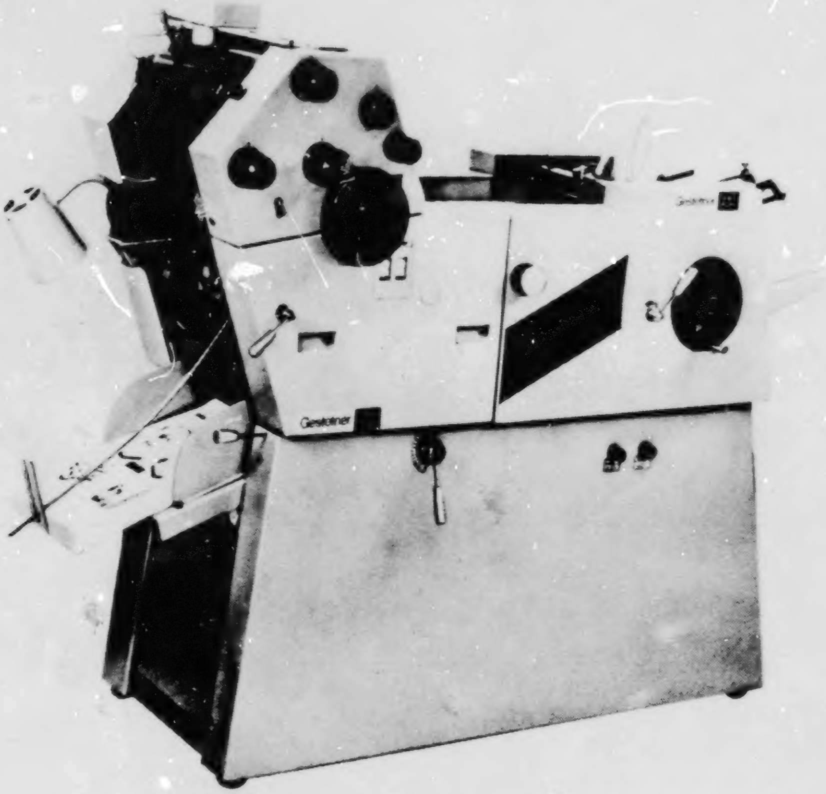


Floor Model Offset Duplica
Courtesy of A. B. Dick Cor



Floor Model Offset Duplicator Model 9840
Courtesy of A. B. Dick Company

ffset Duplicator Model 385
. B. Dick Company



Floor Model Offset Duplicator Model 212
Courtesy of Gestetner Corporation

B. Table model

Table Model Offset Duplicator A. B. Dick Model 310
Photography by OCL Staff

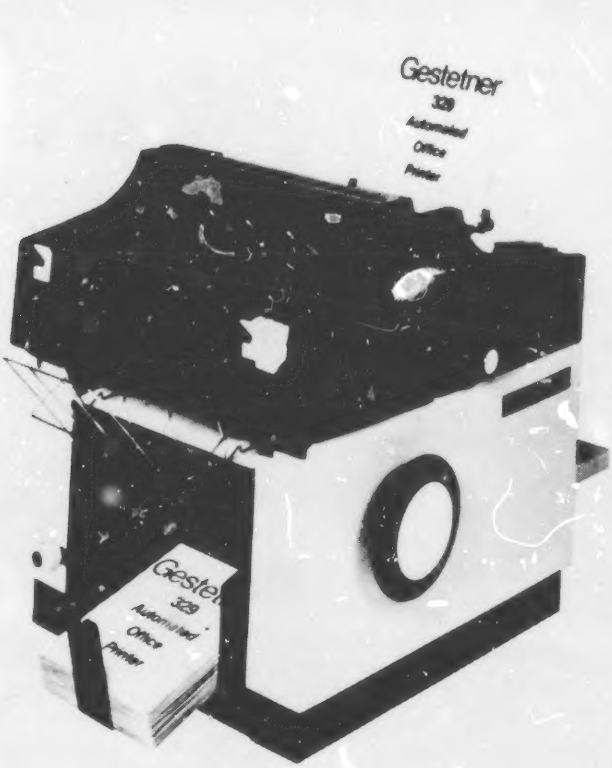
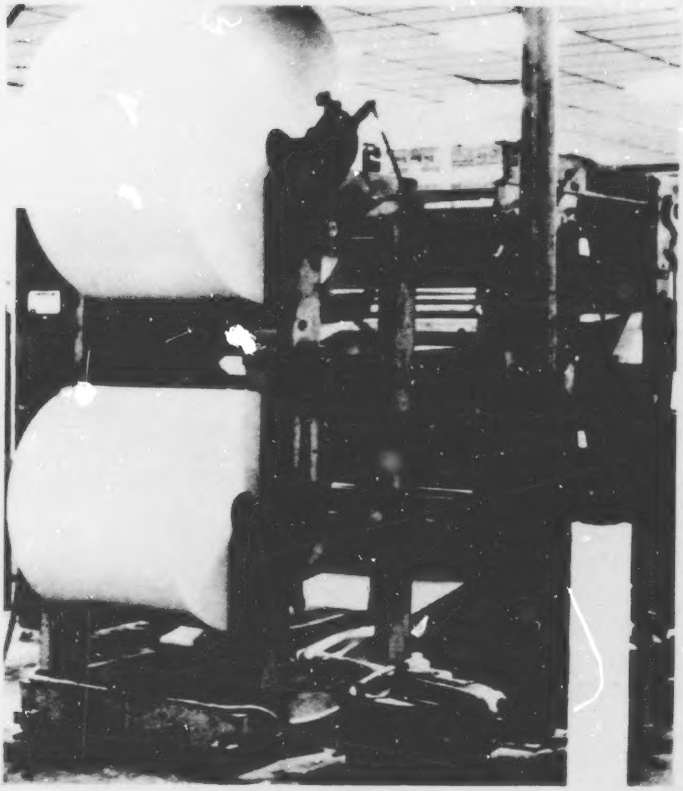


Table Model Offset Duplicator Model 329
Courtesy of Gestetner Corporation

C. Continuous copy model



Continuous copy model
Photography by OCL Staff

III. The Offset Process

A. The offset process is based on the principle that oil and water will not mix. In offset duplication, that means that an oil-based printing ink and a water-based liquid solution will not mix.

B. Copies on an offset duplicator are produced from a paper or metal master which is sometimes called the plate.

C. A direct image is placed on the master. The master is attached around a rotating cylinder called the plate (or master) cylinder.

D. As the master cylinder turns, the master is brought into contact with a small roller (water roller) moistened with a water-based solution. This solution sticks to the area of the master that has no images but will not stick to the image areas.

E. As the master cylinder [illegible] an ink roller contacts the master. The ink from the ink roller sticks to the image areas only. The image now appears in the form of ink on a wet, water-based background.

F. As the master returns, it comes in contact with another large cylinder which has a large sheet of rubber (called a blanket) wrapped around it. When both cylinders rotate, the image from the master cylinder is transferred to the blanket cylinder. The image on the blanket cylinder is the reverse of the image that was on the master (or plate) cylinder.

G. An impression cylinder presses a clean piece of copy paper against the blanket cylinder and the ink on the blanket cylinder now goes on the paper. The printed copy comes out on the other side of the machine.

IV. Offset Press Systems

(NOTE: See TMs 2 and 3)

A. Dampening System

1. In this system, dampening rollers apply a film of dampening solution to the surface of the offset plate, which is wrapped around the plate cylinder.
2. The dampening solution sticks only to the clear areas of the plate.

B. Inking System

1. After the plate has been dampened, the ink rollers apply a film of ink which sticks only to the image portion of the plate.
2. This process of dampening and inking continues throughout the running of the press. In this way, the non-printing areas of the plate remain clear and the ink stays on the plate image area.

C. Cylinder System

1. The inked plate image is transferred to the surface of the blanket (on the blanket cylinder) when the plate cylinder and the blanket cylinder come into contact with each other.

2. The image on the blanket is printed on a sheet of paper as it passes between the blanket and impression cylinders.

D. Feeding Unit

1. Most large paper presses have feeders which operate by air-vacuum.

2. A blast of air separates the top sheets, causing them to float individually.

3. Most small duplicators have rubber feed rollers.

4. The feed table maintains the paper stack at the correct height.

5. Sheet separators keep all but the top sheet from going into the machine.

E. Register Board and Sheet Controls

1. Found only on large offset presses

2. Allows the sheet to be put into place so that it is ready to be gripped by the rollers which will carry the paper into the machine

F. Delivery System

1. On most duplicators, the printed sheet is ejected from the machine into a delivery tray.

2. On larger presses, the sheet is placed into a receding stacker where the paper is stacked neatly.

V. Inking the Offset Duplicator

(NOTE: These procedures are general. Follow specific instructions contained in operator's manual).

A. Remove or secure loose jewelry, neckties, scarves, or other similar items.

B. Don't let hair fall over shoulders.

C. Move the form rollers from the right position to the off position.

D. Turn on the aquamatic control to highest setting.

E. Place ink in ink fountain.

F. Turn the ink fountain knob roller and adjust ink fountain lever.

G. Rotate handwheel for ink roller to contact fountain roller.

H. Move ink fountain control.

I. Set or raise lockout lever.

J. Turn machine to ON and allow time for even distribution of ink on rollers.

K. Move ink fountain control to correct position.

L. Raise or lower moisture lockout lever, depending on machine type.

M. Move moisture control to OFF position and turn machine off.

N. Fill fountain concentrate bottle and mix solution to correct amount of water and fountain concentrate.

O. Place bottle in moisture unit.

VI. Operating the Offset Duplicator

(NOTE: These procedures are general. Follow specific instructions contained in operator's manual.)

A. Remove or secure loose jewelry, necktie, scarves, or other similar items.

B. Don't let hair fall over shoulders.

C. Lower feed table.

D. Load copy paper on feed table.

E. Check or adjust feeding and receiving tray.

F. Adjust feed roll pressure.

G. Attach master (moisten back first if using a paper master).

H. Moisten master. (On metal masters, be sure the arabic gum has been completely removed.)

I. Turn machine to ON positito.

J. Move aquamatic control to desired setting.

K. Move ink control and allow machine to run a few seconds.

L. Set operation control lever to image position.

M. Move control lever to feed position.

N. Feed paper into the machine.

O. Run test copy and make any necessary adjustments.

P. Set counter.

Q. Run desired number of copies.

R. Move operation control lever to NEUTRAL and feed additional blank paper.

S. Turn machine to OFF.

T. Remove master.

U. Clean blanket and cylinder.

VII. Cleaning the Offset Duplicator

(NOTE: These procedures are general. Follow specific instructions for particular model contained in operator's manual.)

A. Remove extra paper.

B. Remove fountain concentrate.

C. Remove leftover ink from ink fountain.

D. Remove ink fountain.

E. Remove ductor roller.

F. Clean ink fountain and ductor roller.

G. Attach cleanup mat.

H. Turn ON machine to lowest speed.

I. Turn moisture control to highest setting.

J. Apply cleanup solution onto ink roller.

K. Move control lever to INK and allow machine to run until clean-up mat is coated with ink.

(NOTE: More than one clean-up mat may be needed.)

L. Continue with steps J and K until mats stay fairly clean.

M. Turn moisture control to OFF position.

N. Clean impression cylinder.

O. Put roller conditioner on rollers.

P. Turn machine to night latch position.

Q. Clean moisture unit tray.

R. Replace ink roller.

S. Replace ink fountain.

T. Move roller control to night latch position.

U. Clean any ink from machine.

V. Store supplies.

VIII. Filing and Storing Offset Master

A. After copies have been duplicated, run a few sheets of paper with form rollers away from master cylinder.

B. Remove master from cylinder.

C. Remove any ink or fountain solution on the master with a cotton pad moistened with water.

D. Apply a thin coat of arabic gum solution over master.

E. Let master dry.

F. Store master in hanging, vertical envelopes or in flat drawers protected by folder.

G. Make sure storage area is cool and dry.

IX. Advantages and Disadvantages of the Offset

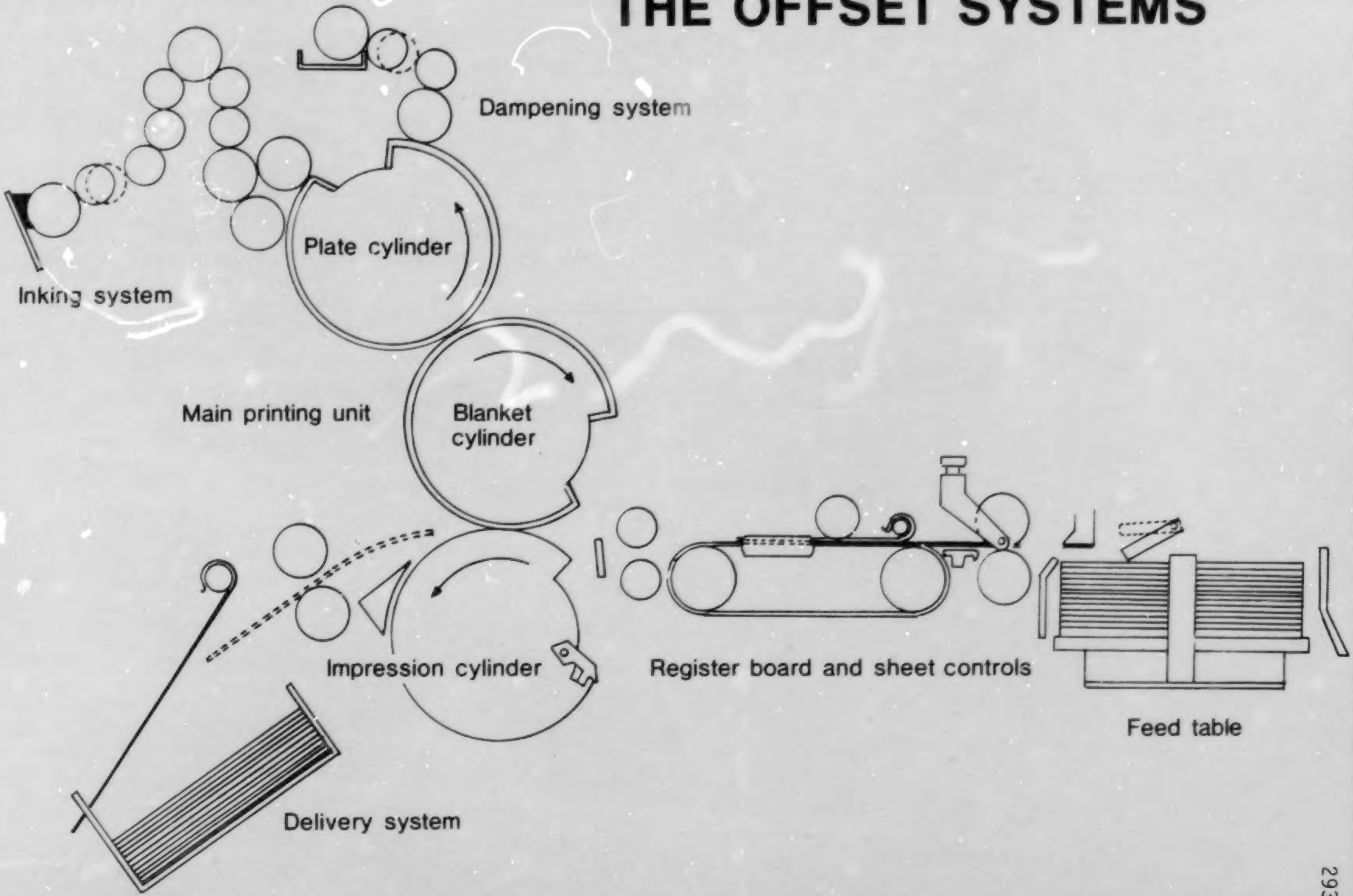
A. Advantages

1. The quality of the copy looks as good as the original.
2. Each copy is of the same high quality.
3. Printing can be done in color.
4. Many copies can be produced in a short period of time.

B. Disadvantages

1. Equipment is more expensive than that used for other forms of duplication.
2. The procedures in operating the machine are harder.
3. It is more expensive to maintain the machine.
4. Material costs are higher than for other types of duplicating machines.

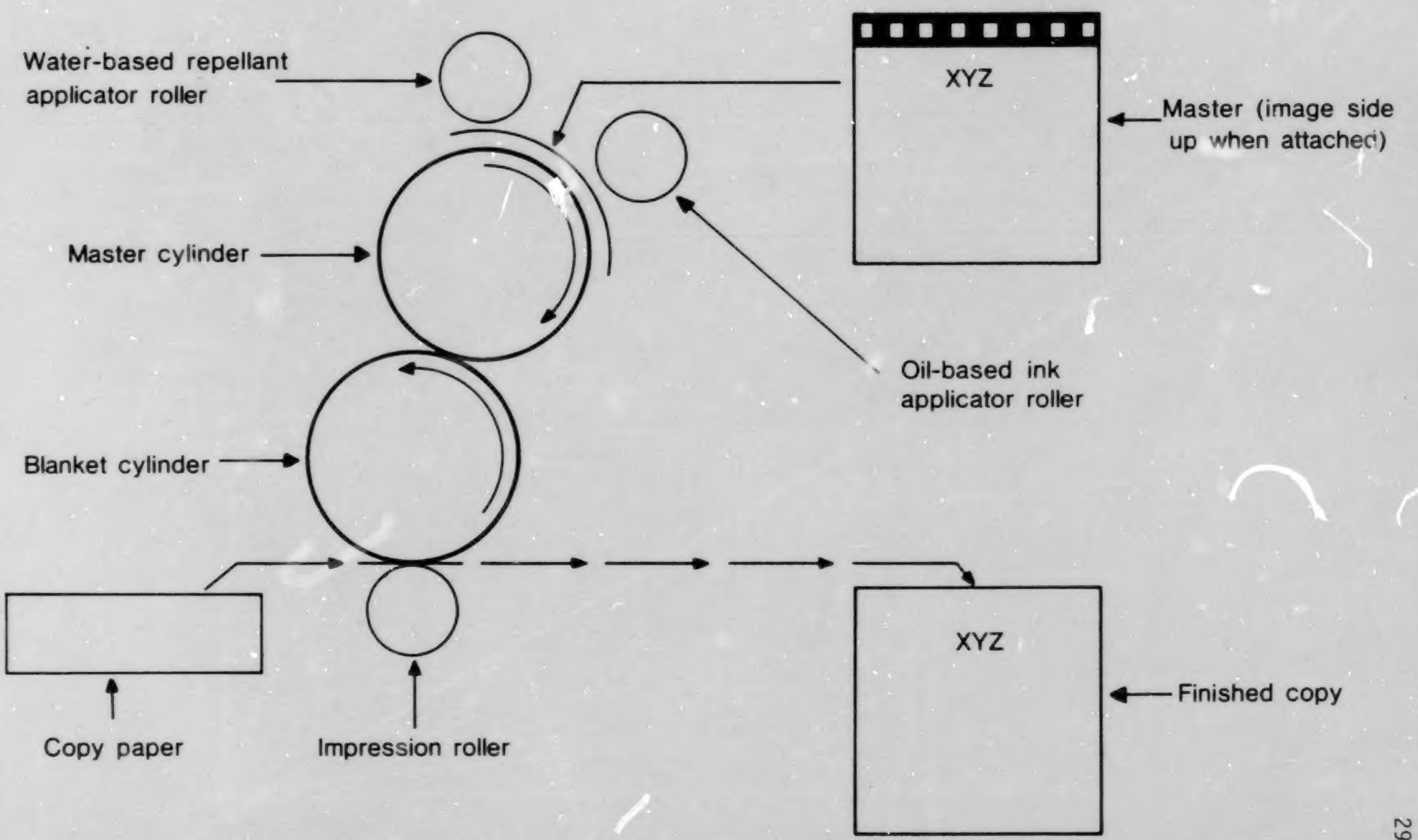
THE OFFSET SYSTEMS



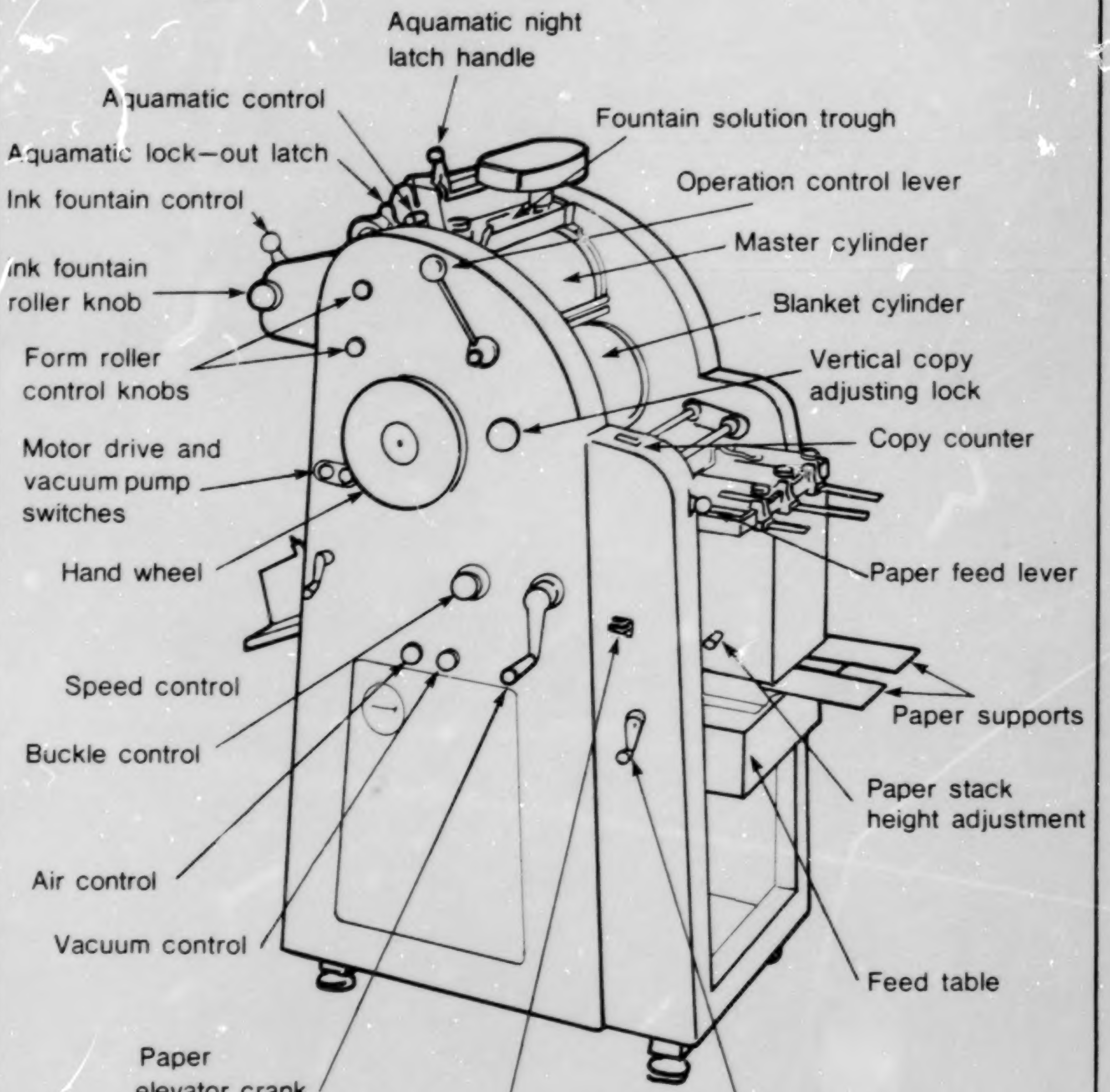
TM-2

293

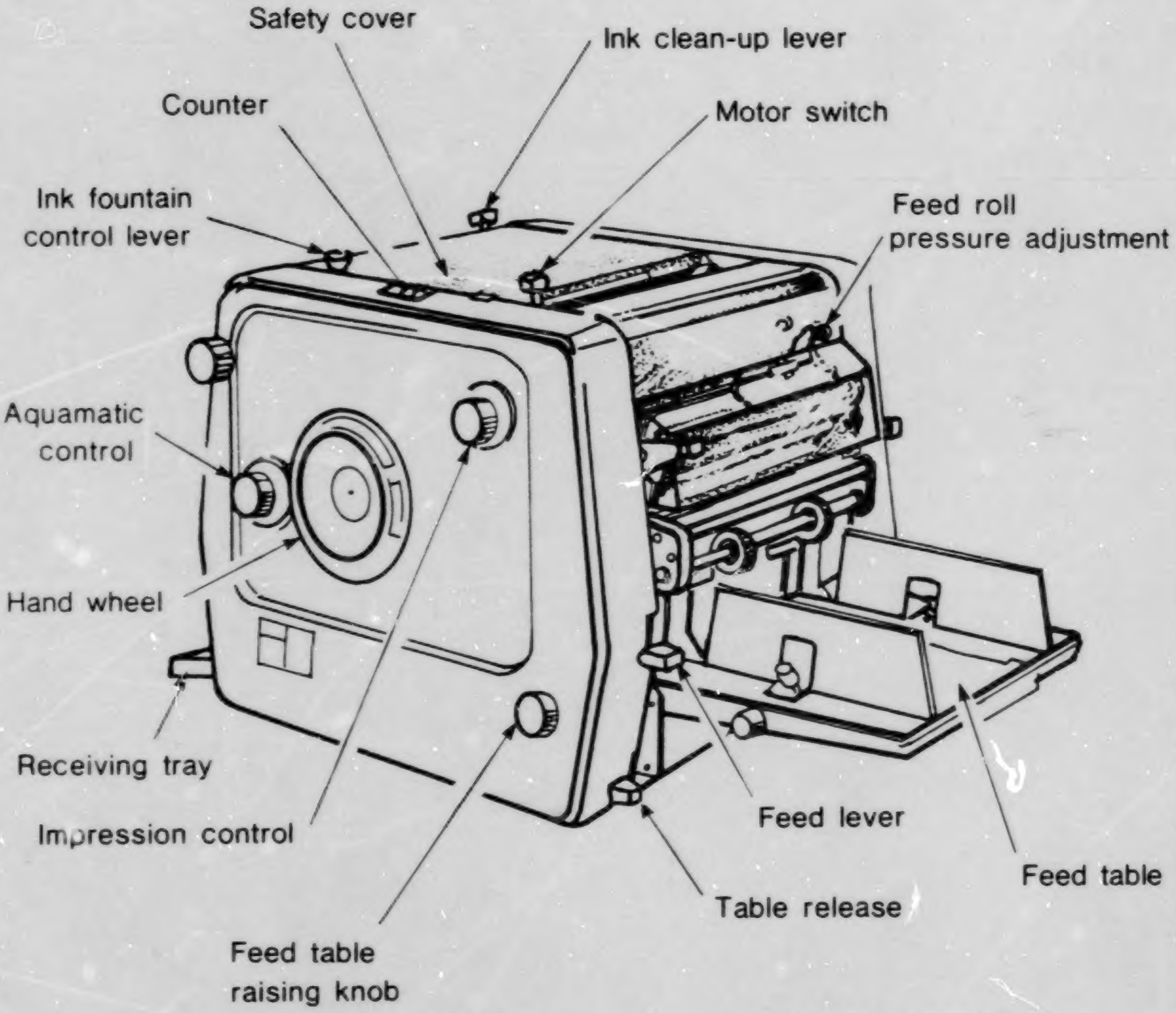
THE REVERSE IMAGE PROCESS


Water-based repellant applicator roller
Master cylinder
Blanket cylinder
Copy paper
Impression roller
XYZ
Master (image side up when attached)
Oil-based ink applicator roller
XYZ
Finished copy

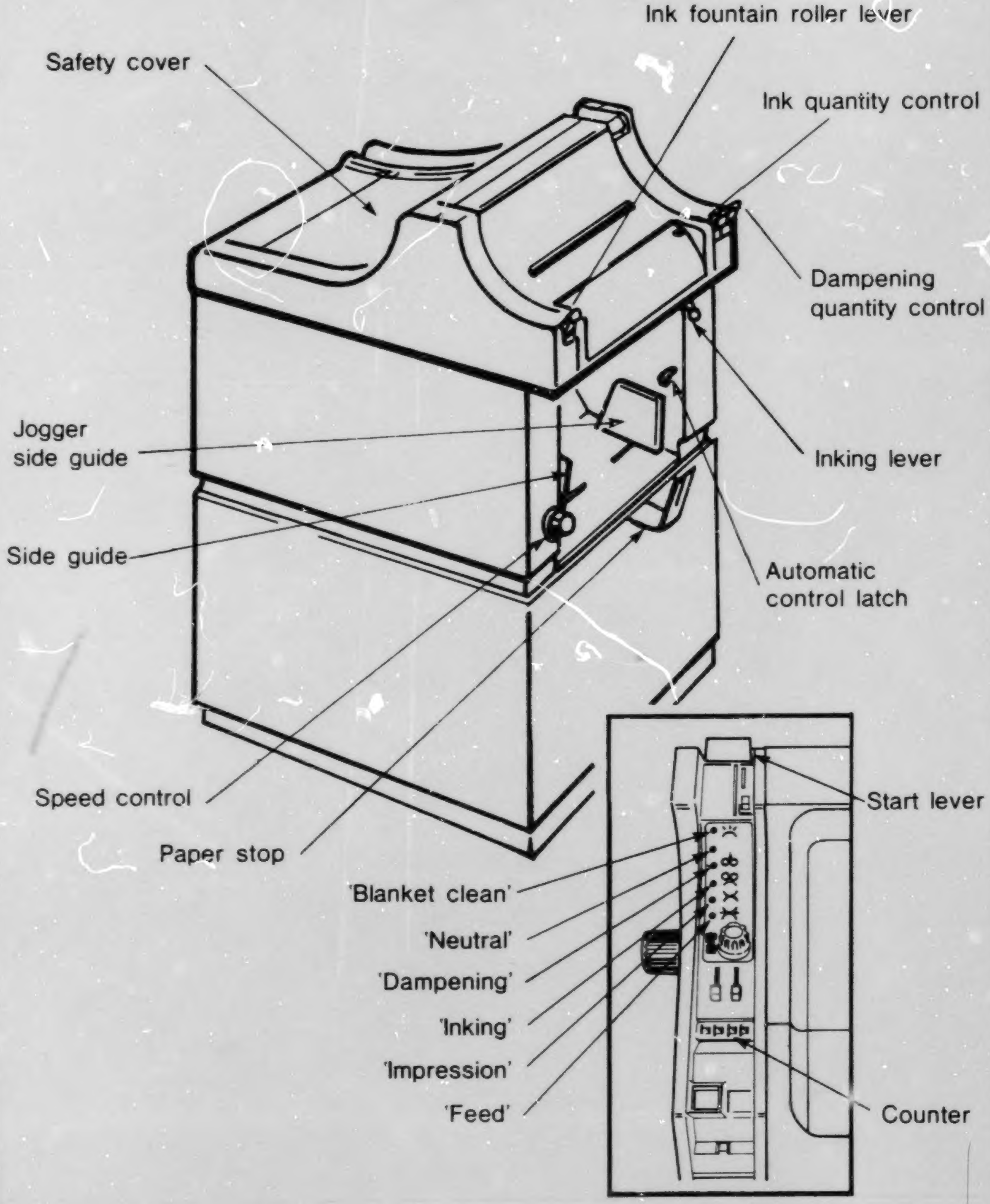
A.B. DICK 360
OFFSET DUPLICATOR PARTS



A.B. DICK 310
OFFSET DUPLICATOR PARTS



GESTETNER OFFSET DUPLICATOR PARTS



UNIT VII

OFFSET DUPLICATION

ACTIVITY SHEET 4--OPERATING THE OFFSET DUPLICATOR

Directions: Run 10 copies of the masters prepared in Activity Sheets 1-3.

UNIT VII

OFFSET DUPLICATION

UNIT TEST--PART 1

A. Match the terms with their definitions by placing the correct letter in the space at the left.

_____ 1. Elite

_____ 2. Ghost image

_____ 3. Grease based substance

_____ 4. Offset duplicator

_____ 5. Offset master

_____ 6. Offset paper master guide marks

_____ 7. Page boundaries

_____ 8. Pica

_____ 9. Warning numbers

a. the limits on a paper master that should not be passed for duplicating certain sizes of paper

b. 12 spaces to an inch

c. 10 spaces to an inch

d. the remains of a mistake which has been erased

e. oil matter

f. machine which transfers image from an offset master to paper

g. numbers which tell how many lines are left on a page

h. markings on the offset paper master

i. thin sheet of paper, plastic, or metal which has a printing image

B. Explain how to correct an error on an offset paper master.

C. List 4 tools that can be used in drawing on a master.

1.

2.

3.

4.

UNIT VII

OFFSET DUPLICATION

UNIT TEST--PART 2

A. Complete the following statements by placing the letter of the correct answer in the space at the left.

_____ 1. The lever which regulates the amount of water flowing during the operation of the machine is called:

a. ink fountain control lever
b. aquamatic control lever
c. operation control lever

_____ 2. The lever which regulates the speed of the machine is called:

a. speed control
b. feed lever
c. operation control lever

_____ 3. The knob which raises the feed table to the needed level is called:

a. ink fountain roller knob
b. lateral copy adjustment knob
c. feed table raising knob

_____ 4. The cylinder which carries the paper inside the offset duplicator is called:

a. blanket cylinder
b. plate cylinder
c. impression cylinder

_____ 5. The cylinder which holds the offset plate or master in place and brings the plate into contact with the dampening rollers is called:

a. plate cylinder
b. impression cylinder
c. blanket cylinder

_____ 6. The cylinder which holds a rubber blanket which comes into contact with the inked image is called:

a. plate cylinder
b. impression cylinder
c. blanket cylinder

_____ 7. The lever which regulates the amount of ink flowing during the operation of the machine is called:

a. ink fountain control lever
b. aquamatic control lever
c. operation control lever

_____ 8. The tray which holds the paper to be duplicated is called:

- a. feed table raising knob
- b. feed tray
- c. receiving tray

_____ 9. The tray which holds the duplicated copies is called:

- a. feed tray
- b. receiving tray
- c. neither a nor b

_____ 10. The control which increases or decreases the pressure of the feed rollers on the paper is called:

- a. ink fountain control lever
- b. impression control
- c. feed roll pressure adjustment

B. Answer the following statements True or False by placing a T for True or an F for False in the space provided.

_____ 1. The offset process is based on the principle that oil and water will not mix.

_____ 2. Copies on an offset duplicator are produced from a paper or metal master.

_____ 3. Another name for direct image master is metal plate.

_____ 4. The dampening solution sticks only to the clear areas of the plate.

_____ 5. Register board and sheet controls are found only on small offset presses.

_____ 6. The printed sheet is ejected from the machine into a feed tray.

_____ 7. Offset printing can be done in color.

_____ 8. A disadvantage to offset duplication is the equipment is more expensive than that used for other forms of duplication.

_____ 9. The offset master is attached to the impression cylinder.

_____ 10. Most large paper presses have feeders which operate by air-vacuum.

UNIT VIII

SUPPLEMENTARY MACHINES

UNIT OBJECTIVE

After completing this unit of instruction, the student should be able to identify terms, parts, and basic procedures in operating office machines used to cut, drill, staple, fold, and bind printed material. This knowledge will be evidenced through demonstration and by successfully completing a unit test.

SPECIFIC OBJECTIVES

After completing this unit of instruction, the student should be able to:

1. Match terms and identify true statements related to the collator
2. Match terms and identify true statements related to the paper cutter
3. Match terms and identify true statements related to the paper drill
4. Match terms and identify true statements related to the saddleback stapler
5. Match terms and identify true statements related to the paper folder
6. Match terms and identify true statements related to the padding press
7. Match terms and identify true statements related to the punch and binder
8. Identify true statements related to the jogger
9. Demonstrate the ability to:
    a. Fan and jog paper
    b. Load and operate the collator
    c. Operate paper cutter
    d. Operate paper drill
    e. Secure a saddleback stapler on table top
    f. Load the saddleback stapler
    g. Clear a staple jam
    h. Staple booklets
    i. Staple flat stacks of paper
    j. Operate the paper folder
    k. Operate the paper jogger
    l. Operate the padding press
    m. Punch and bind a book

UNIT VIII

SUPPLEMENTARY MACHINES

NOTES TO THE INSTRUCTOR

I. Preparation for the Unit

A. Preview the unit. To utilize this curriculum in the most effective way, you should review each unit of instruction and localize and individualize the material for your program.

B. Use only the sections pertaining to the machines in your classroom.

C. There are no activities in this unit. You will need to provide student projects to coincide with the operation of the machines.

D. Prepare a bulletin board.

E. Prepare posters that describe how to operate each machine.

II. Objectives Sheet

A. Review all objectives and then add or delete to meet your own program needs.

B. Review and discuss with the students each specific objective as it relates to the program.

III. Information Sheets

A. INFORMATION SHEET 1--COLLATOR

1. Explain the terms and definitions to the students.

2. Explain the importance of following the safety rules.

3. Show students how to operate your collator.

4. Show students how to fan and jog paper.

5. Allow students to operate the collator.

B. INFORMATION SHEET 2--PAPER CUTTER

1. Explain the terms and definitions to the students.

2. Explain the importance of following safety rules.

3. Explain how to read the cutting scale.

4. Show students how to operate the paper cutter.

5. Allow students to operate the paper cutter.

C. INFORMATION SHEET 3--PAPER DRILL

1. Explain the terms and definitions to the students.

2. Explain the importance of following safety rules.
3. Show students how to operate the paper drill.
4. Allow students to operate the paper drill.

D. INFORMATION SHEET 4--SADDLEBACK STAPLER

1. Explain the terms and definitions to the students.
2. Explain the importance of following safety rules.
3. Show students how to load and unload the stapler.
4. Show students how to secure the saddleback stapler on a table.
5. Show students how to position the saddle table.
6. Allow students to operate the stapler.

E. INFORMATION SHEET 5--PAPER FOLDER

1. Explain the terms and definitions to the students.
2. Explain the importance of following safety rules.
3. Show students how to adjust the paper folder.
4. Show students how to operate the paper folder.
5. Allow students to operate the paper folder.

F. INFORMATION SHEET 6--PADDING PRESS

1. Explain the terms and definitions to the students.
2. Explain the importance of following safety rules.
3. Show students how to use the jogger and the padding press.
4. Allow students to use the jogger and the padding press.

G. INFORMATION SHEET 7--PUNCH AND BINDER

1. Explain the terms and definitions to the students.
2. Explain the importance of following safety rules.
3. Show students how to adjust margins on the punch and binder.
4. Show students how to operate the punch and binder.
5. Allow students to operate the punch and binder.

H. INFORMATION SHEET 8--JOGGER

1. Explain the importance of following safety rules.

2. Explain how to use a jogger.

IV. Transparency Masters

A. TM-1--PAPER COLLATOR

B. TM-2--PAPER CUTTER

C. TM-3--PAPER DRILL

D. TM-4--SADDLEBACK STAPLER

E. TM-5--FOLDING MACHINES

F. TM-6--SETTING UPPER AND LOWER FOLD PLATES

G. TM-7--SETTING ADJUSTMENTS ON THE FOLDER

H. TM-8--PADDING PRESS

I. TM-9--PUNCH AND BINDER

J. TM-10--CORRECT AND INCORRECT PUNCHES

K. TM-11--JOGGER

V. Evaluation

A. The Unit Test is divided into seven parts.

(NOTE: Each part covers the corresponding Information Sheet.)

B. Various approaches may be used in testing.

(NOTE: Research indicates frequent testing on small units is more effective in developing retention for students.

1. Give each part of the test after completion of each Information Sheet.

2. Use the test as an assignment for the student.

3. Some students may respond better to an oral test with the instructor.

4. You should add evaluation questions for any material added to the unit.

VI. Answers to the Test

A. Answers are based upon information covered in the unit.

B. For convenience in grading, add answer sheets to correspond to questions added to the test.

VII. References

A. A. B. Dick Company/Duplicating Equipment Catalog. Chicago: A. B. Dick Company, 1976.

B. Challenge Equipment Planning Guide. Grand Haven, Mich.: Challenge Machinery Company, 1974.

C. Cogoli, John E. Photo Offset Fundamentals. 3rd ed., Bloomington, Ill.: McKnight Publishing Company, 1973.

D. Finishing Procedures, Graphic Communications Series. Chicago: A. B. Dick Co., 1970.

E. Graphic Communication. Jefferson City, Missouri: Industrial Materials Laboratory, University of Missouri, 1973.

F. Instruction and Parts Manual for Model JO Paper Drilling Machine. Grand Haven, Mich.: Challenge Machinery Company, n.d.

G. Operating Instructions, GBC Combo. Northbrook, Ill.: General Binding Corporation, n.d.

H. Operating Instructions for Electric Staplers. Long Island City, N.Y.: Swingline, Inc., n.d.

I. Operating Instructions, Models 12DT and 16DT Collators. Northbrook, Ill.: General Binding Corporation, n.d.

J. Service Manual, NSC DUO Combination Punch Bind Machine. Hot Springs, Ark.: NSC International Inc., n.d.

UNIT VIII

SUPPLEMENTARY MACHINES

ANSWERS TO TEST

PART 1

A. 1. d 5. a
2. f 6. b
3. g 7. c
4. e

B. 1. F 6. F
2. T 7. T
3. T 8. F
4. F 9. T
5. T 10. T

PART 2

A. 1. e
2. a
3. c
4. d
5. b

B. 1. T 6. T
2. F 7. T
3. T 8. T
4. F 9. T
5. F 10. T

PART 3

A. 1. i 5. h
2. b 6. c
3. g 7. e
4. f 8. a

B. 1. T 6. F
2. F 7. T
3. T 8. T
4. F 9. F
5. T 10. T

PART 4

A. 1. a 5. d
2. e 6. c
3. h 7. f
4. g 8. b

B. 1. F 6. F
2. F 7. F
3. T 8. F
4. T 9. T
5. T 10. F

PART 5

A. 1. e 5. d
2. b 6. c
3. f 7. a
4. g

B. 1. F 6. F
2. T 7. T
3. F 8. T
4. T 9. T
5. F 10. F

PART 6

A. 1. e 4. f
2. a 5. d
3. b 6. c

B. 1. T
2. F
3. T
4. F
5. T

PART 7

A. 1. g 5. k
2. e 6. h
3. j 7. d
4. b 8. c

B. 1. T 9. T
2. F 10. T
3. F 11. F
4. F 12. T
5. T 13. F
6. T 14. T
7. F 15. T
8. T

PART 8

1. T 5. T
2. F 6. T
3. T 7. F
4. F 8. T

UNIT VIII

SUPPLEMENTARY MACHINES

INFORMATION SHEET 1--COLLATOR

I. Terms and Definitions

A. Brass skids--protector feet located on the side of the feeder fingers inside the collator bins

B. Collate--method of putting pages of printed material in order

C. Fanning--method of putting air between sheets of paper

D. Feeder fingers--devices that push the paper out of the collator bins

E. Paper tray--container which holds the collated material

F. Set--a group or series of collated papers

G. Stacking tray--a container that holds sets of paper as they are collated

II. Introduction to the Collator

(NOTE: See TM-1)

A. Collators are also called gathering machines.

B. The purpose of the machine is to help assemble separate sheets of paper.

C. The collator may contain from 8 to 150 bins. This means that from 8 to 150 sheets of paper may be assembled at one time.

D. The collator contains rollers which force one sheet of paper at a time from a bin.

III. Safety Rules for Operating the Collator

A. Be sure to unfasten feeder fingers in the bins (or tray) that will not be used.

B. Always fan and jog the paper before loading the machine.

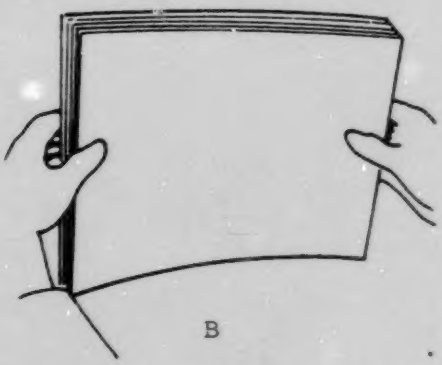
C. Check the feeder rollers to see that they are clean.

D. Do not overload machine.

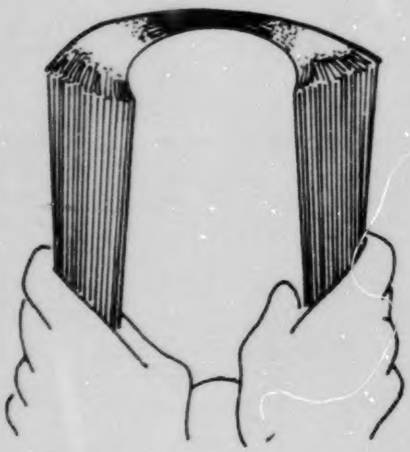
IV. Procedure for Fanning and Jogging Paper

A. Put stack of paper on a flat surface.

B. Using both hands, grasp the paper between thumbs and other fingers.



B



C

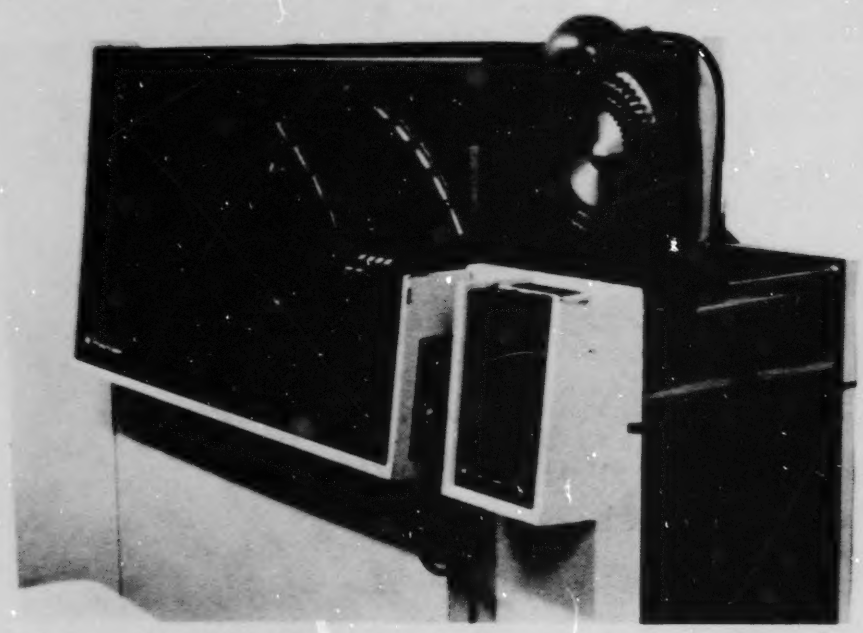
C. Bend the stack of paper with the ends about two inches apart.

(NOTE: Do not use thumb pressure when bending the paper.)

D. Keeping firm pressure between the thumb and fingers on the edges of the stack, reduce the bend until the stack of paper straightens out.

E. Release finger pressure on edges of the paper and guide the paper into a neatly jogged stack.

F. Repeat the above procedures two or three times for each stack of paper.



Floor model collator
Photography by OCL staff

V. Loading and Operating the Collator

(NOTE: The following procedures are general. Follow specific instructions contained in the operator's manual for the particular machine in use.)

A. Carry paper to table beside collator.

B. Plug in the machine.

C. Turn the switch to ON until feeder fingers are in the forward position; then turn the switch to OFF.

D. Lift feeder fingers upward until magnet catches fingers and holds them in place.

E. Fan and jog each stack of paper pages.

F. Place the stack of page one in bin (tray) #1 and continue with pages 2, 3, etc, until all the bins (trays) are filled.

(NOTE: Do not overload a tray.)

G. Adjust paper in each bin.

H. Turn the ON switch until paper is fed out; immediately turn switch to OFF position.

I. Check to see if all pages are feeding properly.

J. Grasp the pages with a "scissor-like" motion and place the sets of pages criss-cross in the stacking tray.

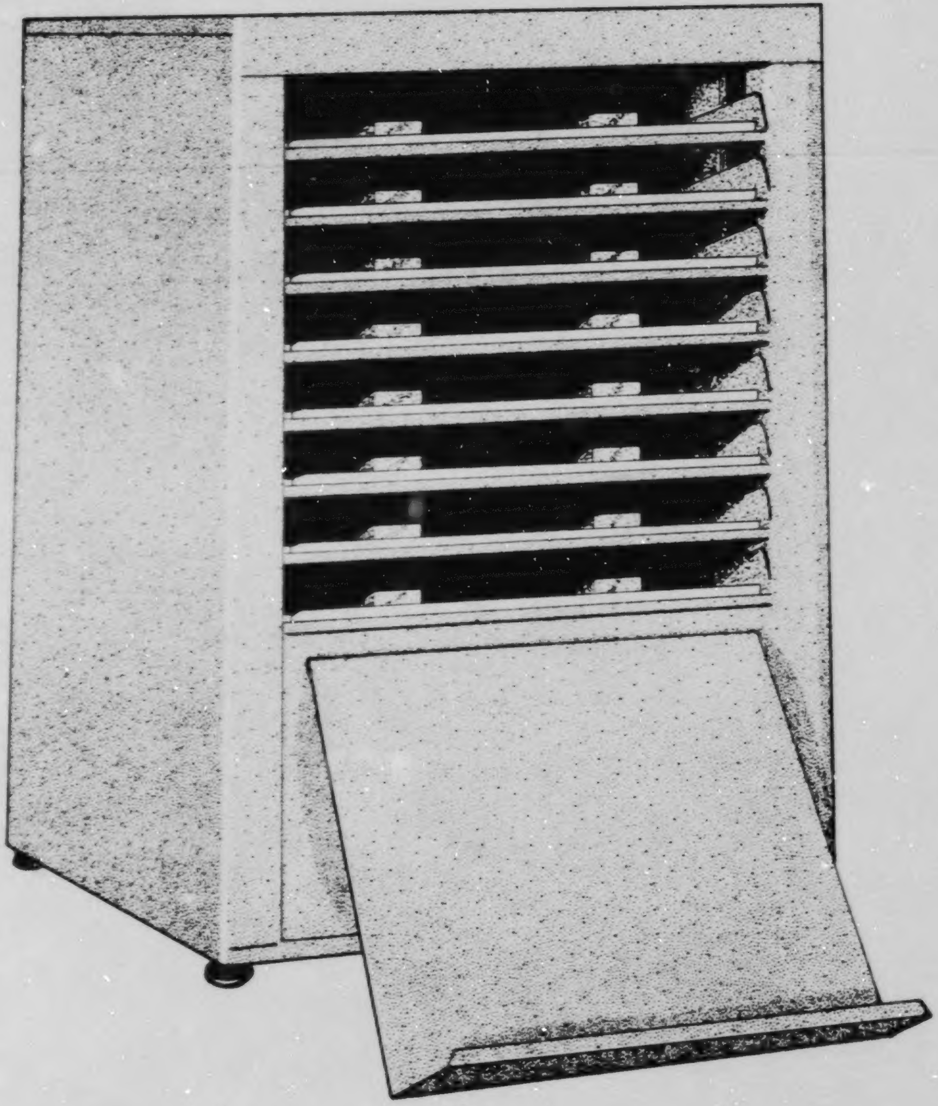
K. Continue gathering sheets until one of the trays is empty.

L. Turn machine switch to OFF.

M. Remove extra sheets from tray.

N. Clean up area.

PAPER COLLATOR



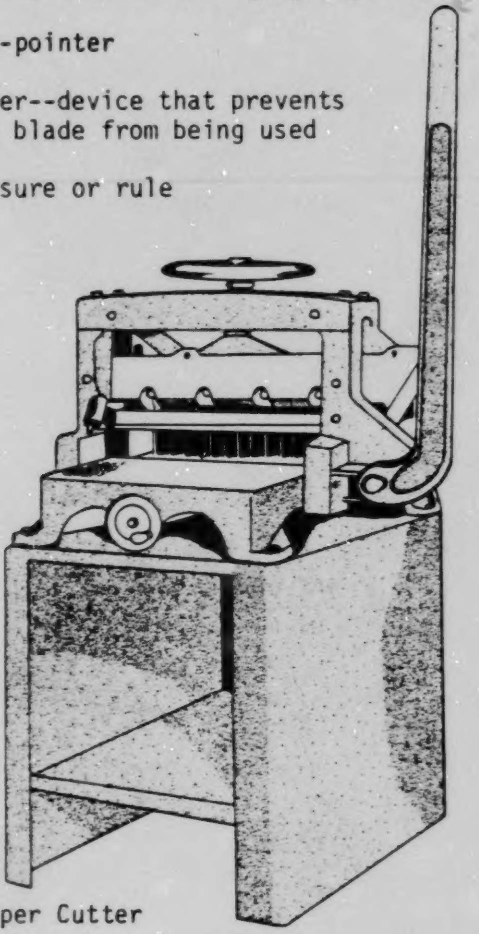
UNIT VIII

SUPPLEMENTARY MACHINES

INFORMATION SHEET 2--PAPER CUTTER

I. Terms and Definitions

- A. Backstop--metal bar which is used to position and straighten the paper at the indicator
- B. Engage--the process of bringing together
- C. Indicator--pointer
- D. Safety lever--device that prevents the cutter blade from being used
- E. Scale--measure or rule



II. Purposes of Paper Cutter

(NOTE: See TM-2)

- A. To provide accurate cutting of paper
- B. To accurately cut small pages from large sheets of paper

III. Safety Rules for Operating the Paper Cutter

- A. Only one person at a time should use a cutter.
- B. Before starting, make sure the cutter bed area is clear.

C. Make sure the cutter blade is sharp.

D. Lift cutter handle after each cut to engage safety latch.

E. Keep one hand on the cutter handle and the other hand on the paper clamp while making a cut.

IV. Reading the Cutting Scale

A. The scale on the paper cutter is usually shown in inches.

B. The scale shows the distance from the backstop to the line of cut.

C. If the alignment in B is correct, the cut paper will be the same size as the measurement shown on the scale.

V. Operating the Paper Cutter

(NOTE: The following procedures are general. Follow specific instructions contained in the operator's manual for the machine to be used.)

A. Check safety lever to be sure it is attached.

B. Set indicator on scale for required number.

C. Jog stack of paper.

D. Place paper on paper cutter with edge to be cut nearest the blade. Place paper edge not to be cut against backstop so that the paper rests evenly.

E. Engage paper clamp to hold paper securely.

F. Release safety catch.

G. Pull handle down to cut paper.

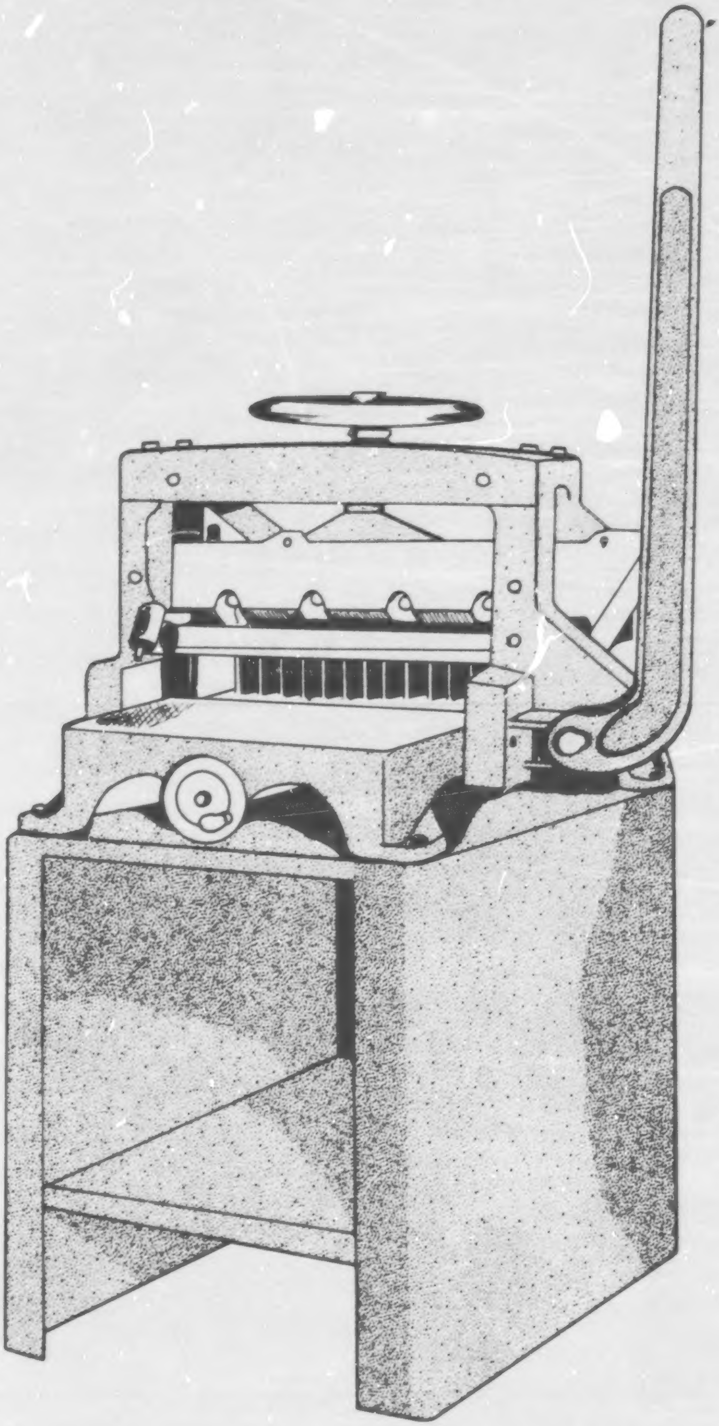
H. Bring handle up far enough to fasten safety catch.

I Release paper clamp.

J. Remove paper from paper cutter.

K. Clean up area.

PAPER CUTTER



TM-2

UNIT VIII

SUPPLEMENTARY MACHINES

INFORMATION SHEET 3--PAPER DRILL

I. Terms and Definitions

A. Backstop--board across the feed table area that holds paper in place

B. Chuck--large end of the spindle which holds the bit

C. Drill bit remover--steel rod with a flat side at one end

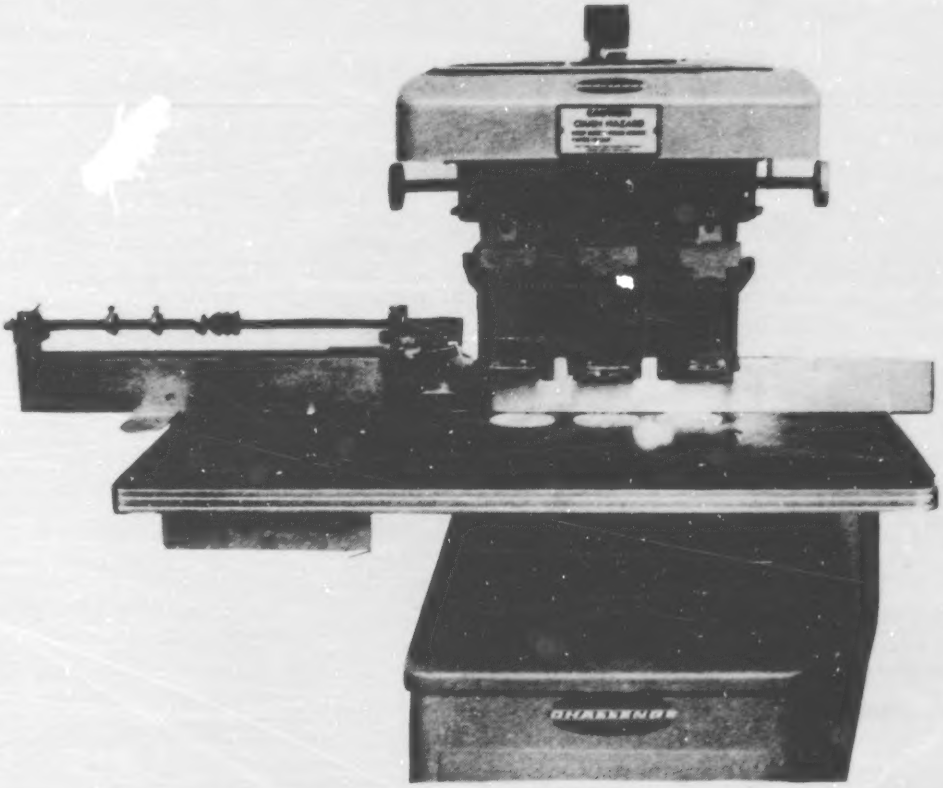
D. Drill block--round circle of wood on paper drill table that is located beneath the drill bit

E. Handle--control lever that operates the drill bit

F. Paper drill bit--round, hollow metal device that puts a hole in paper

G. Sharpener--grinding stone shaped like a pencil

H. Spindle--spinning shaft that holds the drill bit



Paper drill
Photography by OCL staff

II. Purposes

(NOTE: See TM-3)

A. The paper drill is used to put holes in paper.

B. The holes made by the drill make it easy to place paper materials neatly in folders or looseleaf binders.

III. Safety Rules

A. Keep hands away from tip of bit.

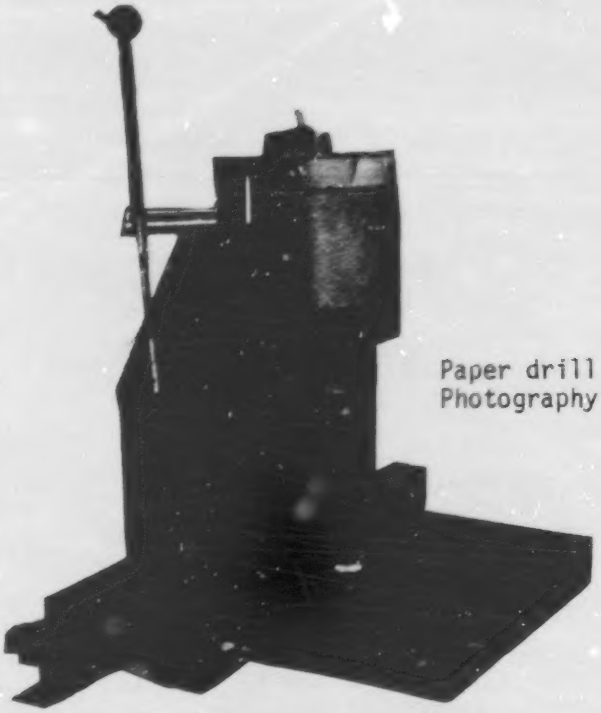
B. Keep hair tied back, away from face and machinery.

C. Know the machine before trying to operate it.

D. Keep work area around paper drill clean.

E. Examine drill bit often to see if it is clogged or plugged up.

F. Keep proper speed and pressure when operating machine to reduce possibility of fire.



Paper drill
Photography by OCL staff

IV. Operating the Paper Drill

(NOTE: These procedures are general. Follow specific instructions contained in operator's manual for particular model in use)

A. Mark the paper in the proper area to be drilled.

B. Check drill bit to be sure it is not clogged.

C. Set the backstop at the proper depth.

D. Place one of the marked areas to be drilled under the drill bit.

E. Pull the handle down until the drill bit guard is resting on the paper.

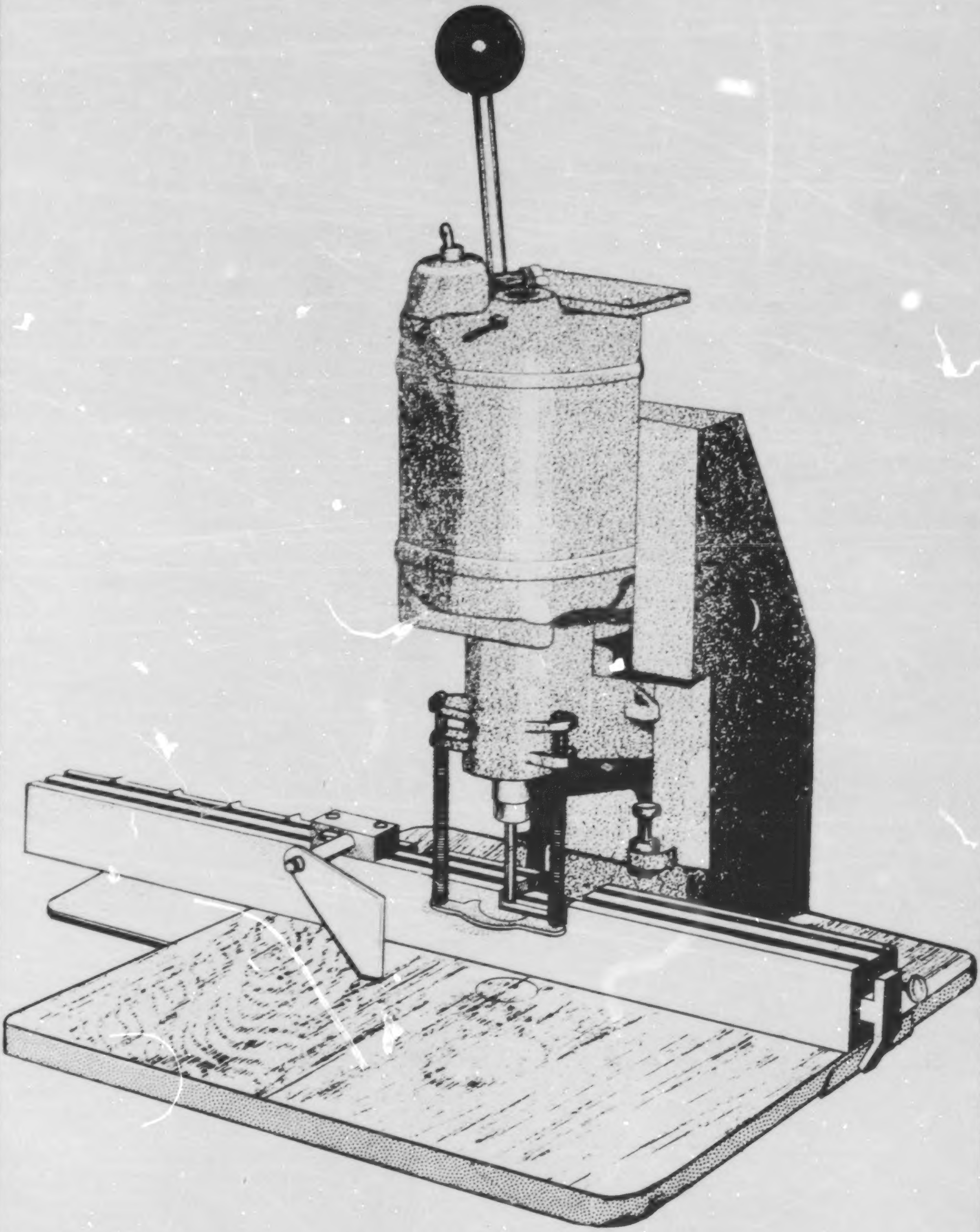
F. Turn the machine switch to ON.

G. Hold paper in place with one hand, and with the other hand guide the bit down through the marked area of the paper.

H. Clean up work area.

I. Make sure paper drill is turned OFF before leaving work area.

PAPER DRILL



TM-3

UNIT VIII

SUPPLEMENTARY MACHINES

INFORMATION SHEET 4--SADDLEBACK STAPLER

I. Terms and Definitions

A. C-clamp--fastener used to hold a table-top stapler

B. Face plate--piece of protective metal at the front of the stapler

C. Handle--control lever on stapler

D. Pusher rod--long piece of u-shaped metal which presses the staples to the proper place for use

E. Saddle table--metal plate that can be used flat when stapling stacks of paper or angled when stapling books

F. Staple remover--device used to remove staples

G. Staples--pre-formed, u-shaped pieces of wire which are drawn through layers of paper to hold the paper together

H. Tension release--small knob at the rear of the loading rod which releases the spring action of the stapler

II. Safety Rules when Using the Stapler

A. Release tension knob before removing face plate.

B. Be sure stapler is clamped securely before you operate the machine.

C. Keep hands away from stapling area.

D. Remove defective staples with a staple remover only.

III. Loading and Unloadig the Stapler

(NOTE: These procedures are general. Follow specific instructions contained in operator's manual for particular model in use.)

A. Release the tension knob slowly.

B. Remove the pusher rod completely.

Stapler
Photography by OCL staff

C. Insert staples and push forward to the front of the stapler.

D. Replace the pusher rod.

E. Fasten the tension knob into the grooved area.

(NOTE: These directions may not apply to all staplers. Be sure to read the instructions for your machine.)

IV. Clearing a Staple Jam

(NOTE: These procedures are general. Follow detailed instructions contained in operator's manual for particular model in use.)

A. Slowly turn the tension release knob.

B. Remove the face plate by removing fastener.

C. Clear the staple jam.

D. Replace the face plate.

E. Put the tension knob back in place.

V. Positioning the Saddle Table

A. When stapling stacks of paper, the saddle table should be flat.

B. When stapling a booklet or other folded material that is to be stapled on the crease, the saddle table should be angled.

VI. Securing a Saddleback Stapler on Table Top

(NOTE: The following procedures are general. Follow specific instructions contained in the operator's manual for the particular model in use.)

A. Set stapler on table.

B. Hold stapler firmly with one hand.

C. Fasten stapler to table with other hand using the C-clamp.

D. Test to make sure the stapler is tightly fastened to the table.

VII. Stapling Booklets

(NOTE: These procedures are general. Follow detailed instructions contained in operator's manual for particular model in use.)

A. Be sure stapler is loaded.

B. Angle saddle table.

C. Place material to be stapled across the saddle table under the stapling mechanism.

D. Hold the paper with one hand, keeping fingers away from direct contact with the staples.

E. Using the free hand, slowly depress stapler handle.

F. Check to see if the staple has been correctly placed; if not, remove the incorrect staple with a staple remover, and then staple again.

G. When all stacks are stapled into booklet form, clean any dropped staples from floor and table top.

VIII. Stapling Flat Stacks of Paper

(NOTE: These procedures are general. Follow specific instructions contained in operator's manual for particular model in use.)

A. Check to see if stapler is loaded.

B. Be sure the saddle table is flat.

C. Place paper to be stapled on the saddle table under the stapling mechanism.

D. Hold the paper with one hand, keeping fingers away from direct contact with the staples.

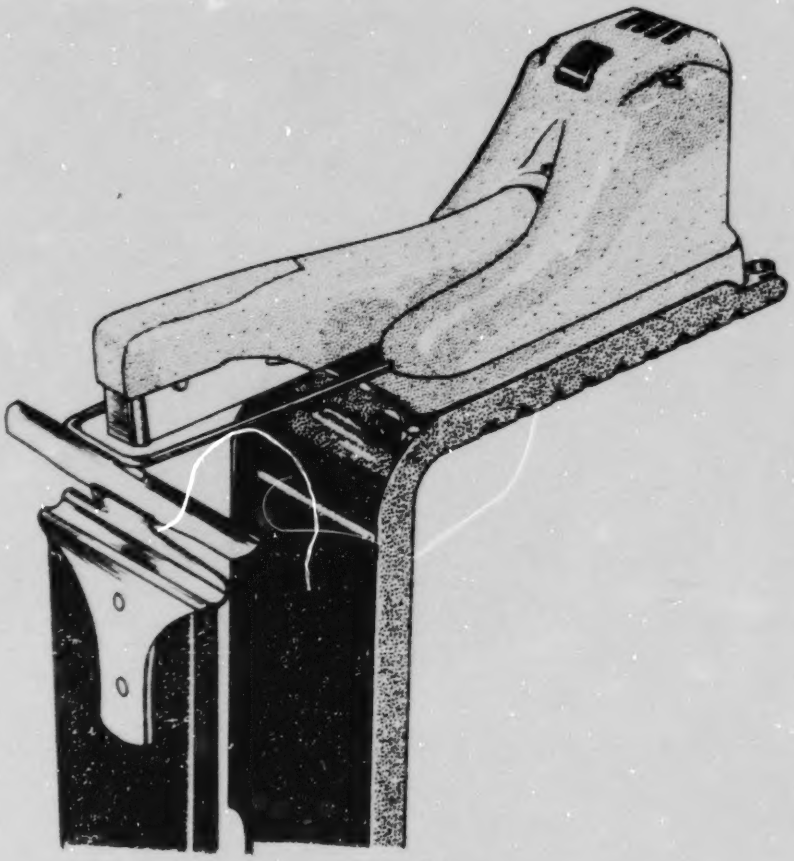
E. Using the free hand, slowly depress the stapler handle.

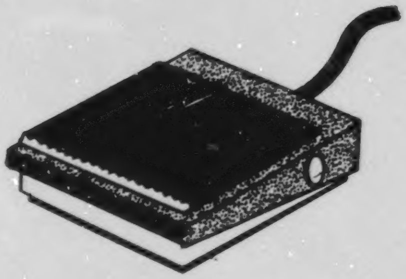
F. Check to see if the staple has fastened the paper correctly; if not, remove the staple with the staple remover, and then staple again.

G. Repeat C through E until job is completed.

H. Clean any dropped staples from floor and table top.

SADDLEBACK STAPLER





FOOT PEDAL

UNIT VIII

SUPPLEMENTARY MACHINES

INFORMATION SHEET 5--PAPER FOLDER

I. Terms and Definitions

A. Deflector--shield which keeps paper from going into lower plate

B. Feed rollers--the device which moves paper on the folder

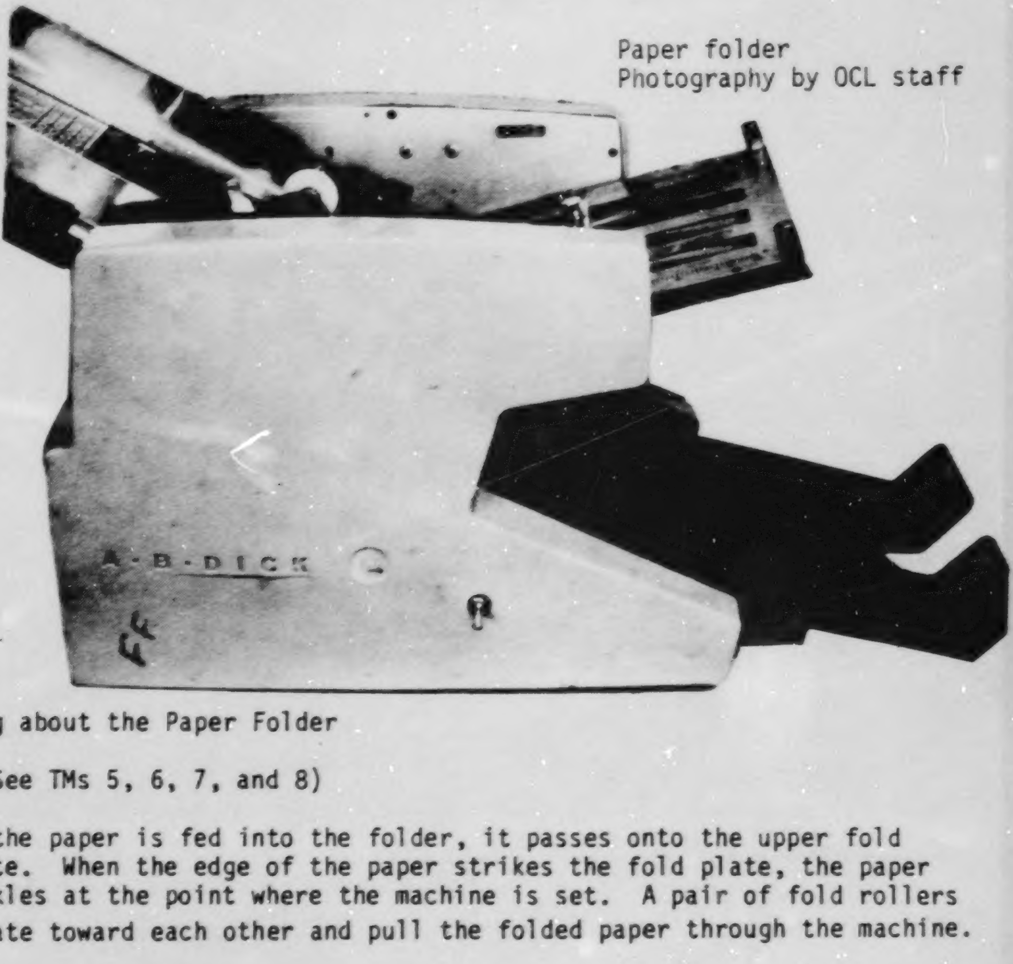
C. Guide rails--metal guards used to guide paper out of the machine

D. Guide rollers--the device which moves paper out of the machine

E. Lower fold plate--metal plate found under paper tray

F. Stacking spring--metal strips that hold paper as it is removed from folding machine

G. Upper fold plate--metal plate at top of machine



Paper folder
Photography by OCL staff

II. Learning about the Paper Folder

(NOTE: See TMs 5, 6, 7, and 8)

A. As the paper is fed into the folder, it passes onto the upper fold plate. When the edge of the paper strikes the fold plate, the paper buckles at the point where the machine is set. A pair of fold rollers rotate toward each other and pull the folded paper through the machine.

B. Some paper folders have a fold chart which gives the fold plate settings for standard folds. With other models, the fold plate settings may be determined by measuring the fold desired.

C. If only one fold is to be made, only the upper fold plate is used. When the deflector level is moved to the ON position, the paper is blocked from entering the lower fold plate. If the deflector level is in the OFF position, the paper enters the lower fold plate for the second fold.

(NOTE: On some models, the fold plate must be turned around for the paper to be deflected.)

D. The folding system must be adjusted to the thickness of the paper being folded. The adjusting knob is turned until a small gap appears between the feed roller and the separator roller.

E. To check the feeding system, place a folded sheet on the receiving tray tapes so that one edge is evenly touching the folding rollers. The stacking spring is put in the center of the paper so that the first stop is resting on the edge of the top sheet of paper.

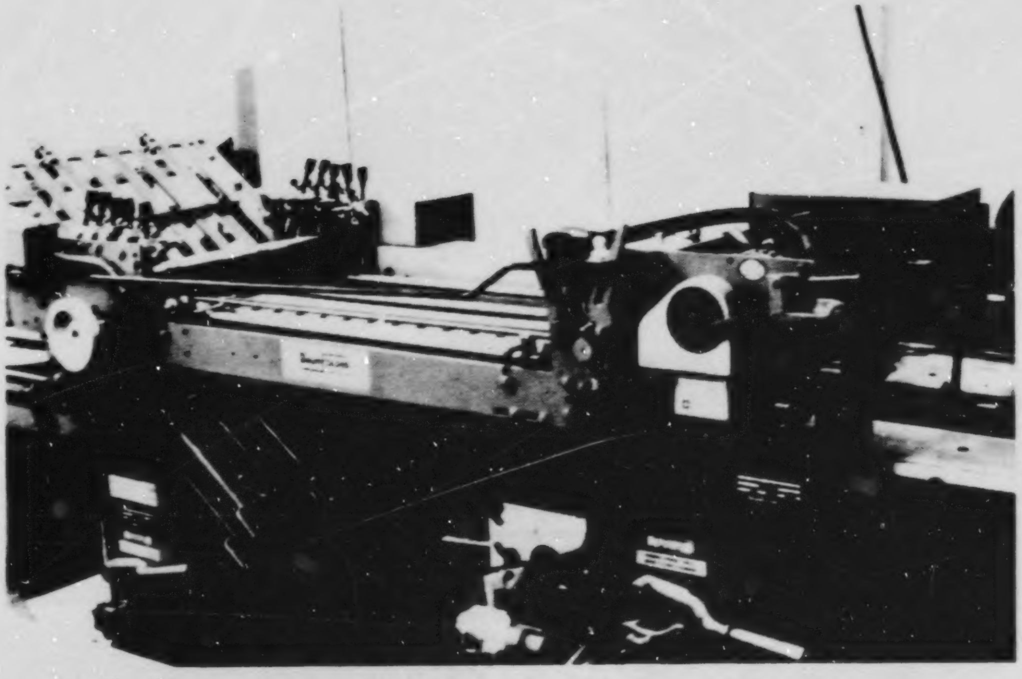
F. The two outside guides are put about one inch from the edges of the paper. The other paper guides should be evenly spaced across the sheet.

III. Safety Rules

A. Tie hair back to avoid getting hair into the folder rollers.

B. Make sure the machine is turned OFF before making any adjustments.

Paper folder
Photography by OCL staff



IV. Operating the Paper Folder

(NOTE: These procedures are general. Follow specific instructions contained in operator's manual for particular model in use.)

A. Set the upper fold plate.

B. Set the lower fold plate.

C. Adjust the deflector for a single fold.

D. Set guide rails for the width of the paper.

E. Position the guide rollers.

F. Adjust for the thickness of the paper.

G. Turn the paper folder ON and check machine, using only one sheet of paper.

H. Position stacking spring so the first edge is resting on folded paper.

I. Position paper guides one unit from edges of paper.

J. Jog and fan the paper so each top sheet will feed into folder first.

K. Feed paper into machine.

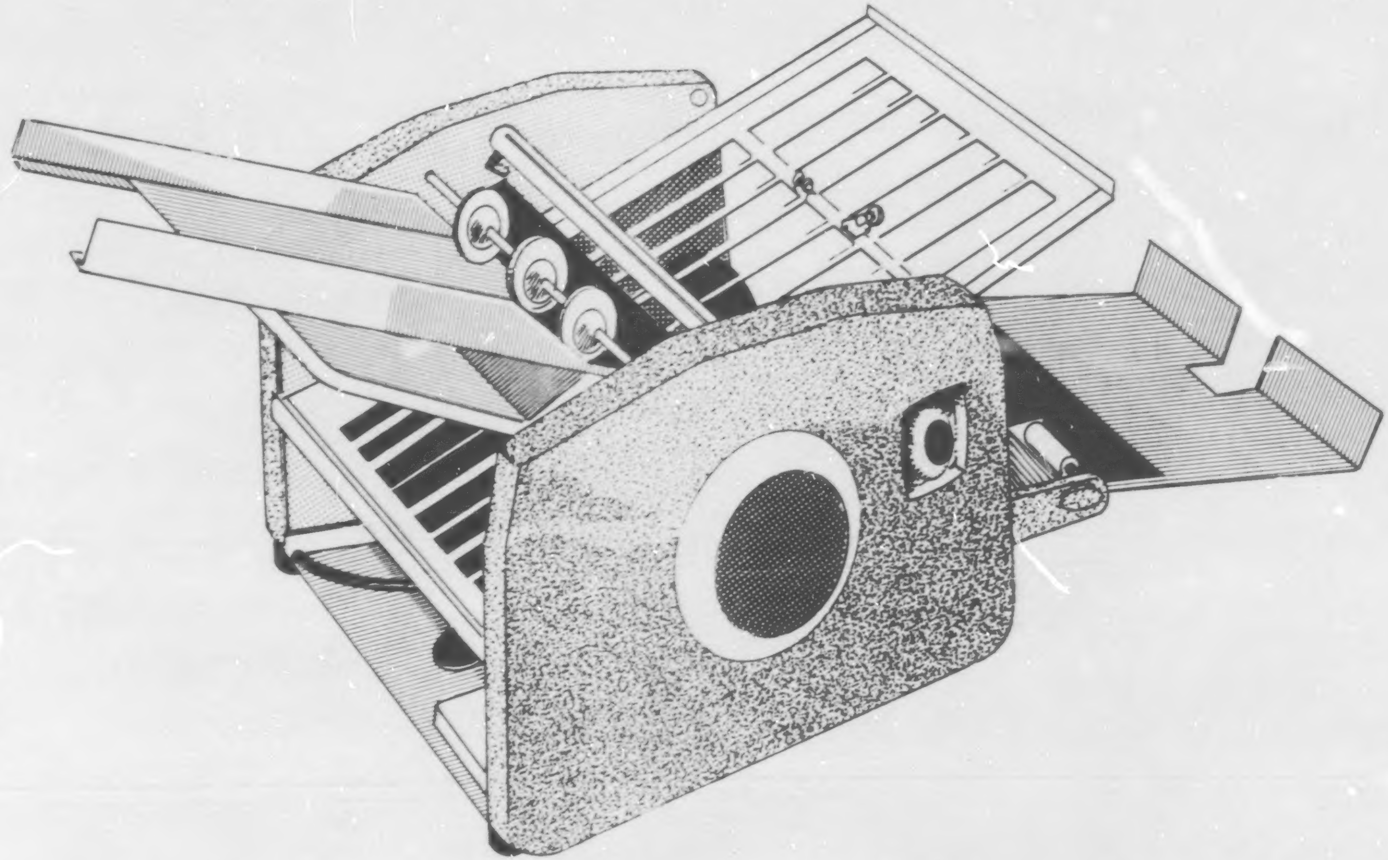
L. After job is completed, throw away crumpled or wrinkled copies.

M. Place folded copies in a neat stack.

N. Replace machine cover.

O. Clean up work area.

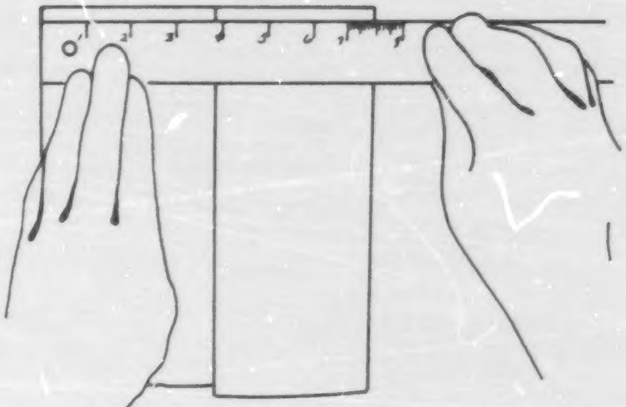
FOLDING MACHINE



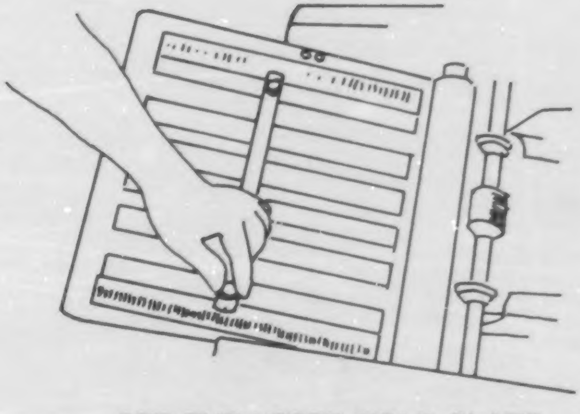
TM-5

343

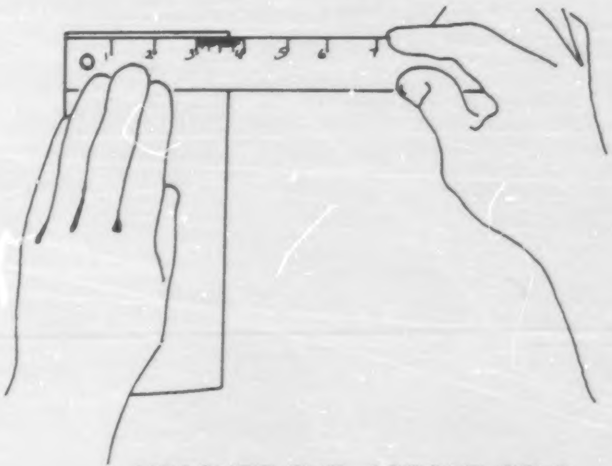
SETTING UPPER AND LOWER FOLD PLATE



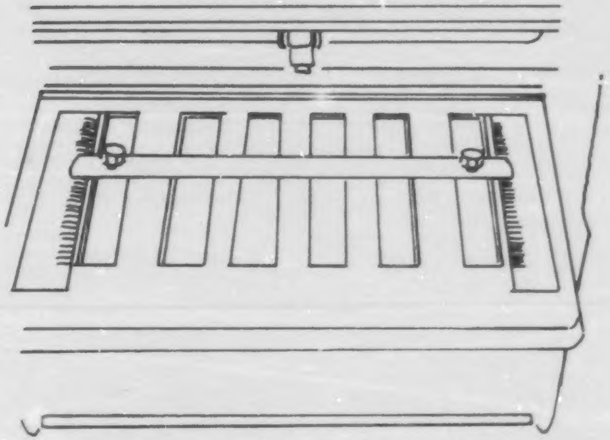
MEASURE THE FIRST FOLD



SET THE UPPER FOLD PLATE



MEASURE THE SECOND FOLD

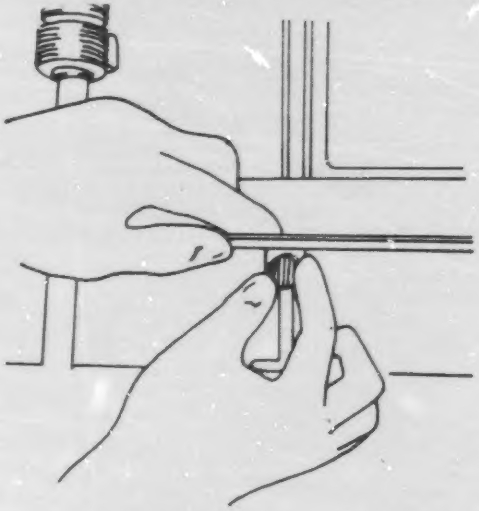


SET THE LOWER FOLD PLATE

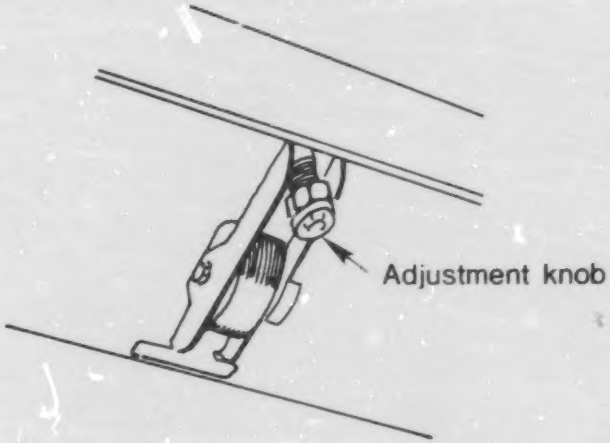
TM-6

345

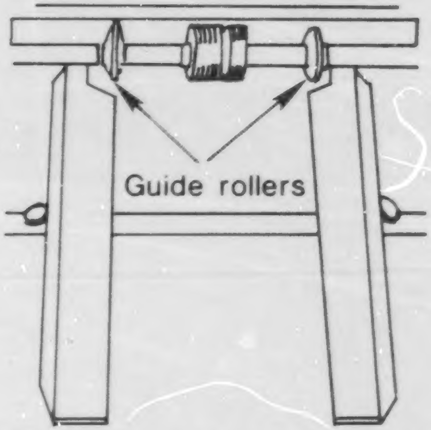
SETTING ADJUSTMENTS ON THE FOLDER



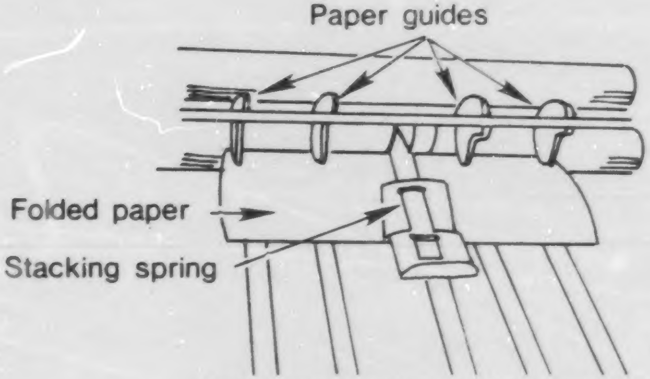
SET THE LEFT SIDE GUIDE RAIL



ADJUST THE FEEDING SYSTEM



POSITION THE GUIDE ROLLERS



POSITION THE STACKING SPRING AND PAPER GUIDES

SUPPLEMENTARY MACHINES

INFORMATION SHEET 6--PADDING PRESS

I. Terms and Definitions

A. Backboard--the part of the padding press which evens a stack of paper

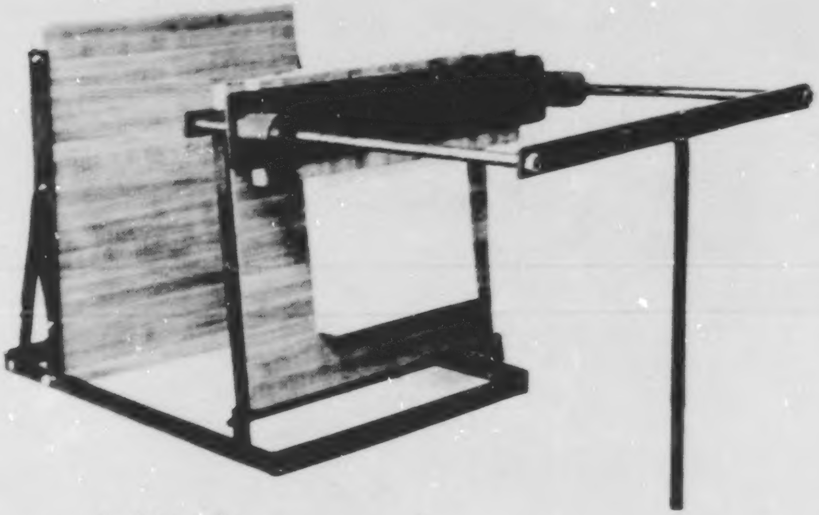
B. Chipboard--cardboard backing on pads

C. Padding cement--material which holds sheets of paper together at one edge

D. Padding press-device which holds stacks of paper to be made into pads

E. Pressure board--the part of the padding press that squeezes the sheets of paper together

F. Water soluble--substance that will dissolve in water



Padding Press
Photography by OCL staff

II. Purposes of the Padding Press

(NOTE: See TM-9)

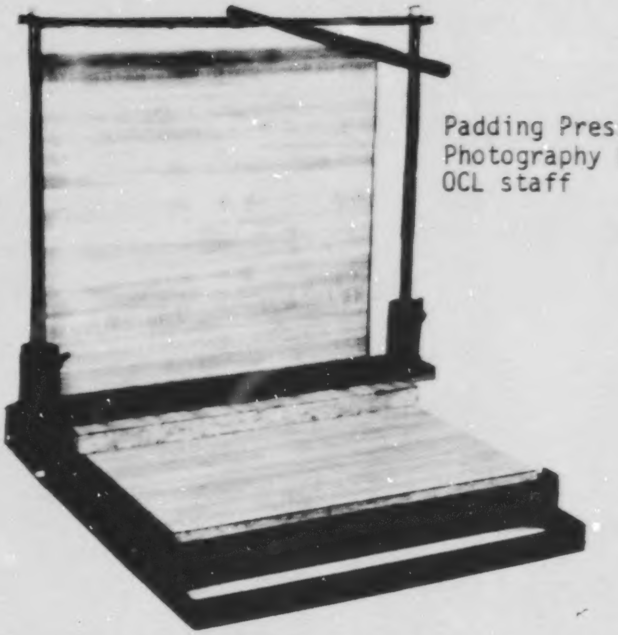
A. To combine loose sheets of paper

B. To hold sheets of paper to be made into a pad

III. Safety Rules when Using the Padding Press

- A. Be careful when handling paper; paper edges can cut.
- B. Be careful if cutting the pads apart with a knife.

  (NOTE: Pads can be pulled apart by hand.)



Padding Press
Photography by
OCL staff

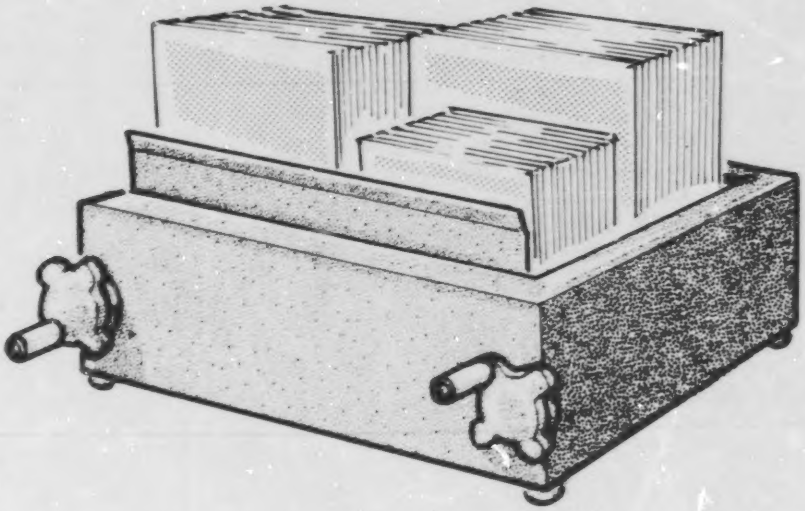
IV. Parts of a Padding Press

- A. Clamping device
- B. Padding cement
- C. Padding cement brush

V. Using the Padding Press

- A. After jogging the paper, desired number of sheets are placed in sets, with a piece of chipboard between each set, in the padding press.
- B. The sets are pushed evenly against the backboard.
- C. Pressure board is clamped firmly so pads will not slip.
- D. Padding cement is applied with a brush by either:
  - 1. Turning the sheets and pressure board around, or
  - 2. Removing the backboard
- E. The pads are cemented from the rear.
  - 1. The cement is applied with a brush.
  - 2. Usually, two coats of padding cement are needed.
- F. When cement is dry, cut pads apart with a knife. Pads may be pulled apart by hand.

PADDING PRESS



UNIT VIII

SUPPLEMENTARY MACHINES

INFORMATION SHEET 7--PUNCH AND BINDER

I. Terms and Definitions

A. Align--to line up; placing two or more materials in position

B. Binder--device used to attach pages of material together (may be metal or plastic)

C. Binding stop--control lever that adjusts binding spread

D. Coverset--front and back covers to be punched and placed with printed material

E. Extend--to spread out

F. Neutral--not in operating position

G. Paper side guide--device which stops the paper at proper place

H. Push-pull pins--steel levers which control operation of punching dies (metal cutters)

II. Purposes of Punch and Binder

(NOTE: See TMs 10 and 11)

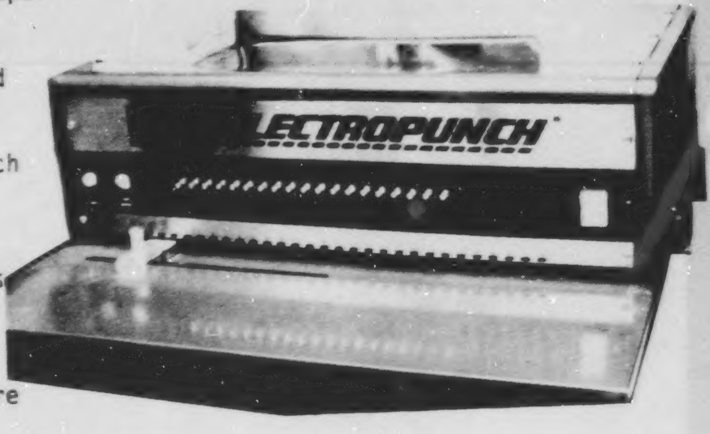
A. To bind loose sheets of paper together

B. To make it easy to add and take out pages

III. Safety Rules when Using a Punch and Binder

A. Be careful when handling plastic binders; the edges are sharp.

B. Be careful when handling paper because the edges are sharp.



Punch and Binder
Photography by OCL staff

IV. Procedures for Using Punch and Binder

A. Adjusting margins

1. Paper is placed into the machine as far as it will go.

2. The left margin is set so that the punching pattern is evenly placed from one side of the paper to the other.

3. The push-pull pins are raised where holes are unnecessary.

B. Punching one sheet

1. Pull the machine handle with a quick, forward stroke.

2. Remove paper and fold it in half to check if the edges are even. If uneven, align another sheet of paper, adjust margins, and repeat the test until margins are even.

C. Punching book

1. Papers are jogged on side to be punched.

2. With the handle in the neutral position, put the papers into the machine in lifts of 12-17 sheets. The sheets are placed against the backstop and to the left of the paper guide.

3. Pull the handle with a quick, forward stroke.

4. Remove the punched sheets from the machine and place printed side down beside machine.

5. Punch the remaining sheets of paper in the same way.

   (NOTE: If several books are to be punched, stack books criss-cross to separate.)

D. Binding book

1. Choose a binder according to the thickness of the book. The right size for a binder is one that is about one-eighth inch larger than the thickness of the book (including covers).

2. Place the binding behind the holding fingers, with a binding circle between each holding finger and the opening of the binding.

3. Set binding control at the proper spread.

4. Push the handle back to open the binding.

5. Place the front cover face down on the binding fingers, with each opening going into a separate binding finger.

6. Place lifts of punched paper face down for binding, with pages in consecutive order.

7. Place the back cover last.

8. Pull the handle forward to the neutral position to release the binding.

9. Lift the bound book off the binder.

10. Check the book to be sure all pages are print-side up.

E. Punching coversets

1. Coversets are usually larger than the paper sheets. The punching pattern starts one-eighth inch from the top and bottom edge of the cover.

2. First, place a scrap coverset in the machine, then center and push to the backstop.

3. Adjust the left paper guide for the left edge of the paper.

4. Where holes are not needed, raise the push-pull pins.

5. Pull the handle forward quickly.

6. After coverset is punched, fold it in half with top and bottom edges touching to check if the margins are even. If not, reset the paper guide, and use another scrap coverset to even the margins.

7. Once the margins are even, punch all coversets on the edge.

V. Emptying the Paper Chip Tray

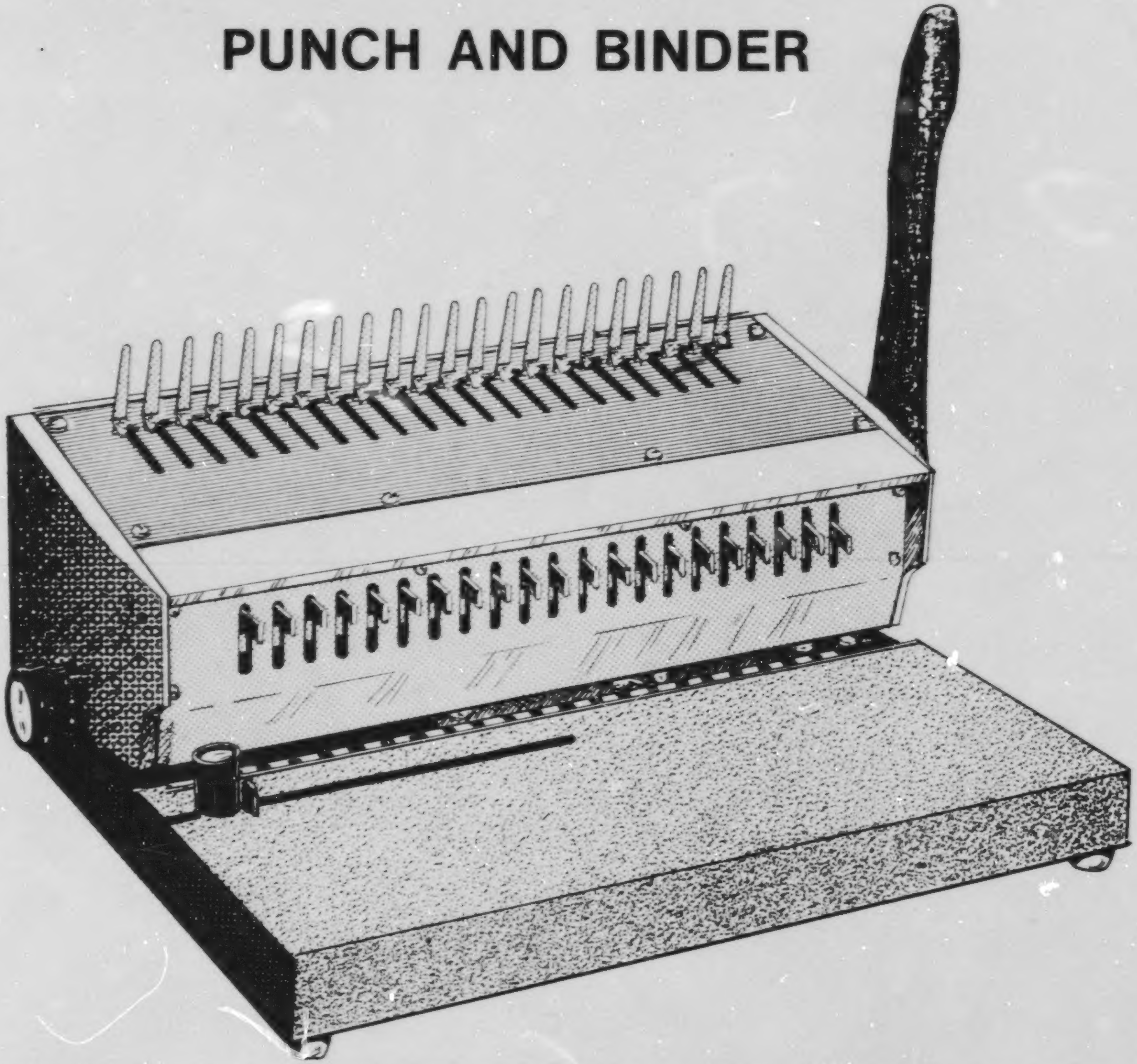
A. If machine punches with difficulty, paper punchings have probably filled the paper chip tray, causing a jam.

B. To clear the jam, place the machine on its back and slide out the tray, allowing the chips to fall out.

C. When all paper chips are removed, replace the tray in the unit.

D. Place the machine right side up and remove any stray paper chips.

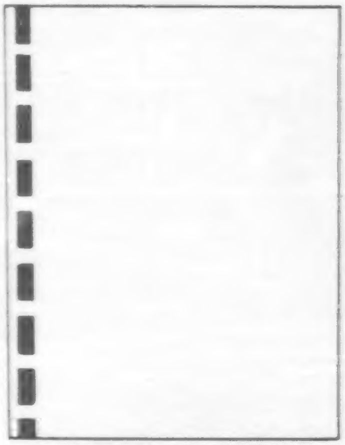
PUNCH AND BINDER



TM-9

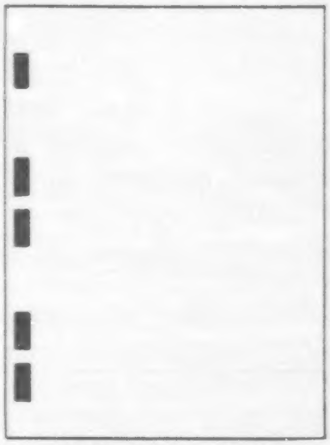
357

CORRECT AND INCORRECT PUNCHES



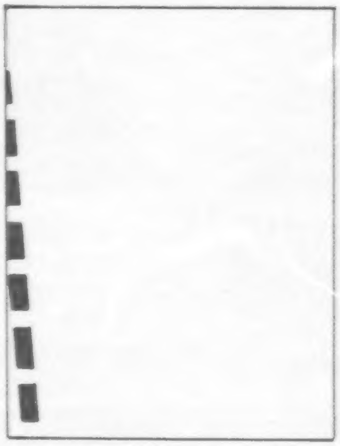
EDGES PUNCHED

(Push-pull pin not de-activated on edge of paper)



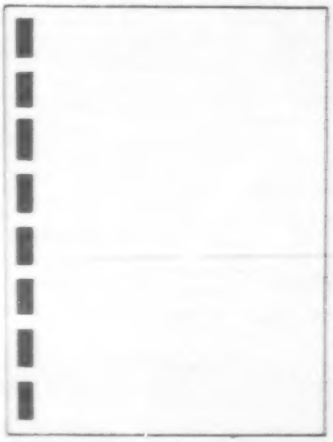
IMPROPER PINS DE-ACTIVATED

(Leaves spaces not punched)

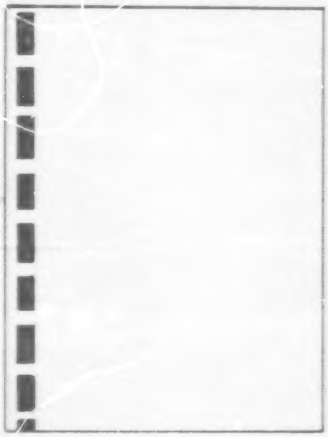


CROOKED PUNCH

CORRECT PUNCH



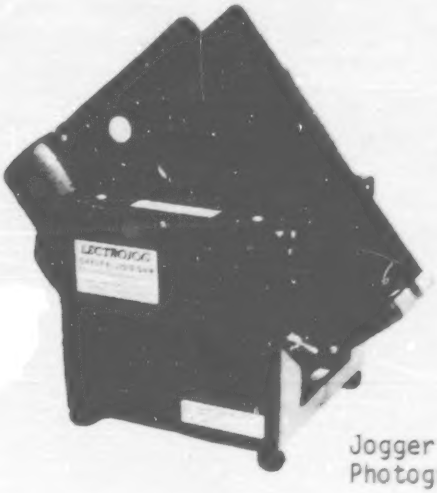
INCORRECT MARGINS (Top and Bottom)



SUPPLEMENTARY MACHINES

INFORMATION SHEET 8--JOGGER

I. Jogger--a machine which puts sheets of paper in an even stack



Jogger
Photography by OCL staff

II. Paper Jogger Features

(NOTE: See TM-12)

A. May consist of a small electric motor fastened to a wooden tag

B. Has a motor shaft which is unbalanced with a weight

C. May contain a speed control to handle different weights of paper

III. Safety Rules

A. Use care when handling paper because edges can cut.

B. Dry hands before using the jogger.

IV. Operating the Paper Jogger

(NOTE: These procedures are general. Follow specific instructions contained in operator's manual for particular model in use.)

A. Assemble paper.

B. Put paper into jogger.

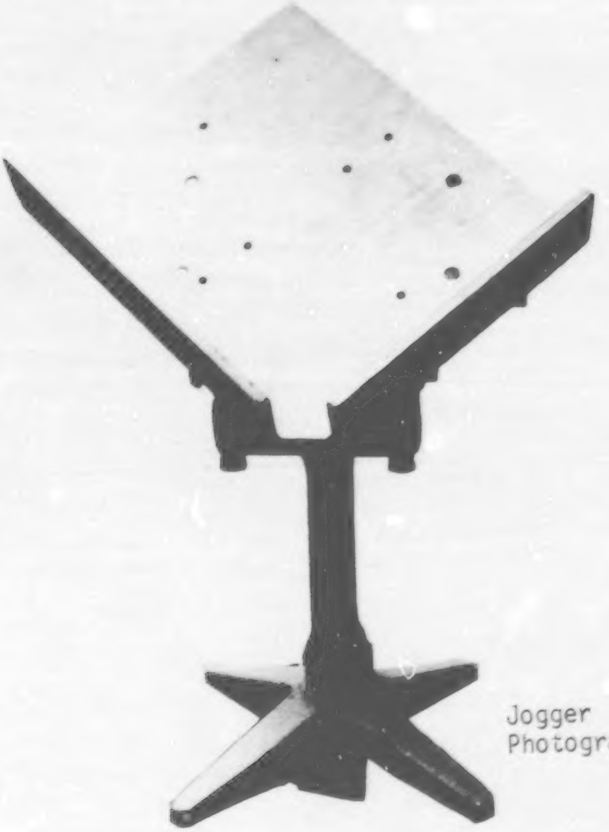
C. Hold the paper steady with one hand.

D. With the other hand, turn the jogger ON.

E. Let the machine operate for a few seconds until all edges of the paper are even.

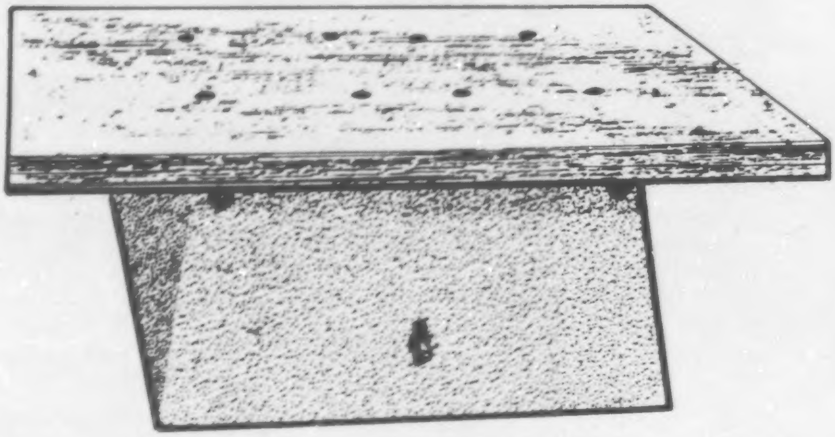
F. Turn machine OFF.

G. Clean up work area.

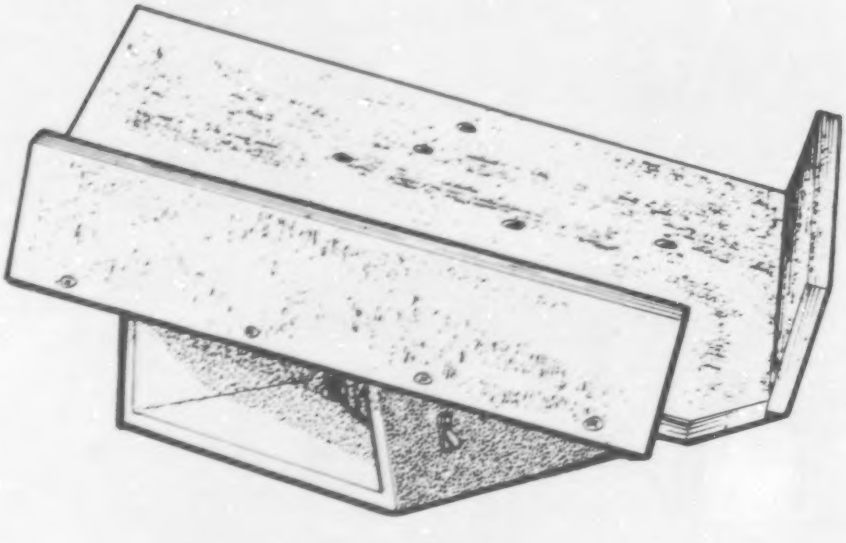


Jogger
Photography by OCL staff

JOGGER



FLAT TOP



TILT TOP

.UNIT VIII

SUPPLEMENTARY MACHINES

UNIT TEST--PART 1

A. Match terms on the left with the definitions by placing the correct letter in the space at the left.

_____ 1. Brass skids

_____ 2. Feeder fingers

_____ 3. Collate

_____ 4. Fanning

_____ 5. Paper tray

_____ 6. Set

_____ 7. Stacking tray

a. container which holds collated material

b. a group or series of collated papers

c. container that holds sets of paper as they are collated

d. protector feet located inside the collator bins

e. method of putting air between sheets of paper

f. device that pushes the paper out of the collator bins

g. method of putting pages of printed material in order

B. Answer the following statements True or False by placing a T for True or an F for False in the space at the left.

_____ 1. Collators are also called joggers.

_____ 2. The purpose of the collator is to assemble separate sheets of paper.

_____ 3. A collator has rollers which force separate sheets of paper out of bins.

_____ 4. It is not necessary to unfasten the feeder fingers in the bins which will not be used.

_____ 5. Do not overload the collator.

_____ 6. In fanning and jogging paper, use thumb pressure when binding the paper.

_____ 7. In loading the collator, turn the switch to ON until feeder fingers are in the forward position.

_____ 8. Continue gathering sheets until all of the trays are empty.

_____ 9. Place the stack of page "one" in the #1, and continue with pages 2, 3, etc., until all of the trays are filled.

_____ 10. The collator may contain from 8 to 150 bins.

UNIT VIII

SUPPLEMENTARY MACHINES

UNIT TEST 1--PART 2

A. Match the terms on the left with the definitions by placing the correct letter in the space at the left.

_____ 1. Safety lever

_____ 2. Indicator

_____ 3. Scale

_____ 4. Backstop

_____ 5. Engage

a. pointer

b. the process of bringing together

c. measure or rule

d. metal bar used to position and straighten paper

e. device which prevents cutter blade from being used

B. Answer the following statements True or False by placing a T for True or an F for False in the space at the left.

_____ 1. A purpose of a paper cutter is to provide an accurate cutting of paper.

_____ 2. Two people can operate a paper cutter more easily than one person.

_____ 3. The paper cutter bed needs to be clear before the paper cutters is used.

_____ 4. A dull cutter blade is better than a sharp cutter blade.

_____ 5. Both hands are placed on the paper cutter when making a cut.

_____ 6. The scale on the paper cutter is usually shown in inches.

_____ 7. A sharp cutter blade is less likely to cause serious injuries.

_____ 8. Lift cutter handle after each cut to engage safety latch.

_____ 9. The cutting scale shows the distance from the backstop to the line of cut.

_____ 10. A purpose of the paper cutter is to cut accurately small pages from large sheets of paper.

UNIT VIII

SUPPLEMENTARY MACHINES

UNIT TEST--PART 3

A. Match the terms on the left with the definitions by placing the correct letter in the space at the left.

_____ 1. Paper drill bit

_____ 2. Spindle

_____ 3. Handle

_____ 4. Sharpener

_____ 5. Drill block

_____ 6. Drill bit remover

_____ 7. Backstop

_____ 8. Chuck

a. large end of the spindle which holds the bit

b. spinning shaft that holds the drill bit

c. steel rod with a flat side on one end

d. cardboard used as a back on a paper pad

e. board across feed table area that holds paper in place

f. grinding stone shaped like a pencil

g. control lever that operates the drill bit

h. round circle of wood beneath the drill bit

i. hollow metal device that puts a hole in paper

B. Answer the following statements True or False by placing a T for True or an F for False in the space provided.

_____ 1. The paper drill is used to put holes in large amounts of paper.

_____ 2. The paper drill is used to jog papers for use in making paper pads.

_____ 3. Examine drill bit frequently to see if it is clogged or plugged.

_____ 4. Keep work area around paper drill dirty.

_____ 5. Before drilling a hole, set the back stop at the proper depth.

_____ 6. Use both hands to guide the bit down through the marked area of the paper.

_____ 7. Keep hair tied back when using the paper drill.

_____ 8. The paper drill is used to drill holes which make it easy to place paper neatly in folders or loose leaf binders.

_____ 9. When using the drill bit, keep hands on the tip of the drill.

_____ 10. When using the drill bit, keep proper speed and pressure to reduce the possibility of fire.

SUPPLEMENTARY MACHINES

UNIT TEST--PART 4

A. Match the terms on the left to the definitions by placing the correct letter in the space at the left.

_____ 1. C-clamp
_____ 2. Face plate
_____ 3. Handle
_____ 4. Pusher rod
_____ 5. Saddle table
_____ 6. Staples
_____ 7. Tension release
_____ 8. Staple remover

a. fastener used to hold a table top stapler

b. device used to remove staples

c. pre-formed u-shaped pieces of wire which are drawn through layers of paper to hold the paper together

d. metal plate that can be used flat when stapling stacks of paper or angled when stapling books

e. piece of protective metal at the front of the stapler

f. small knob at the rear of the loading rod which releases the spring action of the stapler

g. long piece of u-shaped metal which presses the staples to the proper place for use

h. control lever on stapler

B. Answer the following statements True or False by placing T for True or F for False in the space at the left.

_____ 1. When stapling flat stacks of paper, be sure the saddle table is at an angle.

_____ 2. When stapling booklets, be sure the saddletable is flat.

_____ 3. To fasten the saddleback stapler to a table top, hold the stapler firmly with one hand, and with the other hand fasten the stapler to the table using the c-clamp.

_____ 4. Always release the tension knob before removing face plate.

_____ 5. Before operating the saddleback stapler, be sure it is clamped securely.

_____ 6. Remove defective staples with your hand.

_____ 7. When clearing a staple jam, first remove the face plate.

_____ 8. When stapling a flat stack of paper, use both hands to dpress the stapler.

_____ 9. Keep hands away from stapling area.

_____ 10. There is no way to remove a staple if it is incorrect.

UNIT VIII

SUPPLEMENTARY MACHINES

UNIT TEST--PART 5

A. Match the terms on the left with the definitions by placing the correct letter in the space at the left.

_____ 1. Upper fold plate

_____ 2. Lower plate

_____ 3. Deflector

_____ 4. Feed rollers

_____ 5. Guide rails

_____ 6. Guide rollers

_____ 7. Stacking spring

a. metal strips that hold paper as it is removed from folding machine

b. metal plate under paper tray

c. the device which moves paper out of machine

d. metal guards used to guide paper out of the machine

e. metal plate at top of machine

f. shield which keeps paper from going into lower plate

g. the device which moves paper on the folder

B. Answer the following statements True or False by placing a T for True or an F for False in the space at the left.

_____ 1. As the paper is fed into the folder, it passes onto the lower fold plate.

_____ 2. Some paper folders are equipped with a fold chart.

_____ 3. If only one fold is to be made, only the lower fold plate is used.

_____ 4. The folding system must be adjusted to the thickness of the paper being folded.

_____ 5. The feeding system is never checked for accuracy.

_____ 6. The two outside guides are positioned about three inches from the edge of the paper.

_____ 7. Always turn the machine off before making adjustments.

_____ 8. Jog and fan the paper before it is fed into the machine.

_____ 9. When the edge of the paper strikes the fold plate, the paper buckles at the point where the machine is set.

_____ 10. If the deflector level is in the OFF position, the paper is blocked from entering the lower fold plate.

UNIT VIII

SUPPLEMENTARY MACHINES

UNIT TEST--PART 6

A. Match the terms on the left to the definitions by placing the correct letter in the space at the left.

_____ 1. Backboard

_____ 2. Chipboard

_____ 3. Padding cement

_____ 4. Padding press

_____ 5. Pressure board

_____ 6. Water soluble

a. cardboard backing on pads

b. material which holds sheets of paper together at one edge

c. substance that will dissolve in water

d. the part of the padding press that squeezes the sheets of paper together

e. the part of the padding press which evens a stack of paper

f. device which holds stacks of paper to be made into pads

g. machine which puts sheets of paper in an even stack

B. Answer the following statements True or False by placing a T for True or an F for False in the space at the left.

_____ 1. A purpose of a padding press is to combine loose sheets of paper.

_____ 2. While the cement on the pads is still wet, separate the pads with a knife.

_____ 3. The last step in making a pad is to separate the pads with a knife or by hand.

_____ 4. The pads are cemented from the front.

_____ 5. The cement is applied with a brush.

UNIT VIII

SUPPLEMENTARY MACHINES

UNIT TEST--PART 7

A. Match the terms on the left with the definitions by placing the correct letter in the space at the left.

_____ 1. Align

_____ 2. Extend

_____ 3. Neutral

_____ 4. Paper side guide

_____ 5. Push-pull pins

_____ 6. Binder

_____ 7. Binding stop

_____ 8. Coverset

a. being straight up and down

b. device which stops the paper at the proper place

c. front and back covers to be punched and placed with printed material

d. control lever that adjusts binding spread

e. to spread out

f. the length of a straight line through the center of a figure

g. to line up; placing two or more materials in correct position

h. device used to attach pages of materials together

i. a figure having parallel sides which are all right angles

j. not in operating position

k. steel levers which control operation of punching dies

B. Answer the following statements True or False by placing a T for True or an F for False in the space at the left.

_____ 1. Use care when handling plastic binders.

_____ 2. Run fingers over paper edge to check paper cut.

_____ 3. Paper is placed into the machine with the edge just inside the punch and binder.

_____ 4. The left margin is never set; it always stays the same.

_____ 5. The push-pull pins are raised where holes are not needed.

_____ 6. Before punching several sheets, always punch one sheet to make sure the edges are even.

_____ 7. Papers are jogged on the opposite side to be punched.

_____ 8. The handle is in the NEUTRAL position when the paper is inserted into the machine.

_____ 9. The sheets are placed against the backstop and to the left of the paper guide.

_____ 10. Pull the handle with a quick forward motion when using the punch and binder.

_____ 11. In binding a book, the right size for a binder is one that is about 1/4 inches larger than the thickness of the book.

_____ 12. If punch and binder punches with difficulty, paper chips have probably filled the paper chip tray, causing a jam.

_____ 13. The punch and binder will not punch coversets because coversets are larger than paper sheets.

_____ 14. In binding a book, place the front cover face down on the binding fingers, with each opening going into a separate binding finger.

_____ 15. To clear a paper chip jam, place the machine on its back and slide out the tray, allowing the chips to fall out.

UNIT VIII

SUPPLEMENTARY MACHINES

UNIT TEST--PART 8

Answer the following statements True or False by placing a T for True or an F for False in the space at the left.

_____ 1. A paper jogger may consist of a small electric motor fastened to a wooden tag.

_____ 2. Slide fingers across paper edges to check paper cut.

_____ 3. Dry hands before using the jogger.

_____ 4. Allow jogger to run a few minutes before putting paper into jogger.

_____ 5. Let the paper jogger operate for a few seconds until all edges of the paper are even.

_____ 6. A paper jogger is a machine which puts sheets of paper in an even stack.

_____ 7. Place one piece of paper on the jogger at a time.

_____ 8. Hold the paper steady with one hand and turn the machine on with the other.